Grassy Mountain Gold Project
Groundwater Reports

Vol. I, Groundwater Baseline Report

Vol. II, Groundwater Characterization Report

Vol. III, Dewatering Projections and Evaluation of Potential Pumping Impacts

Prepared for

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Vol. I, Groundwater Baseline Data Report

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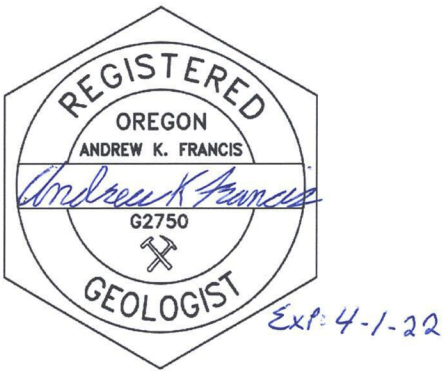

SPF WATER ENGINEERING

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1. INTRODUCTION

This report describes well and spring monitoring activities conducted by SPF Water Engineering (SPF) for Calico Resources USA Corp's Grassy Mountain Gold Project Groundwater Resources Baseline Study.

1.1. Work Plan

The scope of work for this study is described in the *Environmental Baseline Study Work Plans, Grassy Mountain Project* (EM Strategies 2017). This document is referred to as the Work Plan in this report.

The 2017 Work Plan Section 3.4.7 describes the following attributes to be included in this baseline data report:

- Introduction
- Regulatory environment
- Groundwater study area
- Sampling events
- Sampling sites
    - Monitoring wells
    - Springs
    - Flowing wells
- Data collection methods
    - Description of sampling sites
    - Water level measurements
    - Continuous water level measurements
    - Spring flow measurement
    - Pump installation and sampling manifold
    - Monitoring well water quality data collection method
    - Spring water quality data collection method
    - Spring water quality QA/QC
- Results and analyses
    - Water level data
    - Spring/flowing well flow data
    - Water quality analysis
    - QA/QC
- List of preparers

1.2. Purpose of Report

This report summarizes the groundwater baseline data as required by the Work Plan for the proposed Grassy Mountain Gold Project underground mine (Proposed Grassy Mountain Mine). Specifically, Calico Resources USA Corp (Calico), a wholly owned subsidiary of Paramount Gold Nevada Corp (Paramount), has conducted investigations

to address the requirements of the Work Plan. A separate document will be prepared to address the request from the Technical Review Team Water Resources Subcommittee (TRT) for a conceptual groundwater model.

The purpose of the Groundwater Resource Baseline Study is to:

- Provide baseline data of the quality and quantity of local groundwater resources.
- Develop a monitoring well network for the purpose of monitoring groundwater levels and water quality within each aquifer potentially affected by mining operations.
- Collect data of known and acceptable quality in accordance with project-specific methods and procedures for use in this baseline report and for permitting. Data compilation is intended for future use in mine development and operations, exploration, closure and long-term remediation.

Specifically, this report:

- Serves as the groundwater baseline data report required in the Work Plan.
- Incorporates all baseline spring and well data collected between 2013 and 2018.
- Provides the following additional data requested by the TRT (Lynch 2014):
    - Time series plots including hydrographs
    - Water quality samples compared to drinking water Maximum Contaminant Levels
    - Groundwater surface contour maps
    - Naturally occurring variables and trends
    - Discussion of the impact of pumping at nearby wells on both GW-1 and GW-4.
- Will be used in a subsequent report which will describe the conceptual groundwater model for the Proposed Grassy Mountain Mine.

1.3. Report Organization

The remainder of this report is organized as follows:

- **Section 2** describes the regulatory environment that is the basis for creating this report.
- **Section 3** summarizes investigations conducted in support of the baseline characterization including previous investigations of hydrogeology in the vicinity of the mine site.
- **Section 4** describes the water resources study area.
- **Section 5** provides a synopsis of the baseline water quality and water level monitoring events and schedule.
- **Section 6** describes well and spring monitoring locations.

- **Section 7** describes data collection methods**.**
- **Section 8** describes groundwater level baseline monitoring data.
- **Section 9** describes spring flow monitoring data.
- **Section 10** reviews groundwater quality, including regulated constituents for wells, springs, and flowing artesian wells compared to current national primary and secondary drinking water standards and aquatic habitat criteria (for springs).
- **Section 11** provides conclusions of the groundwater baseline monitoring.
- **Section 12** lists preparers of the baseline report.
- **Section 13** includes references.

2. REGULATORY ENVIRONMENT

The primary objective of the well and spring monitoring activities established by the Work Plan is to collect data to characterize existing (pre-mining) groundwater resources within the Study Area. This baseline characterization will ultimately be used in a conceptual groundwater model and in future evaluations to determine impacts the mining operations could have on groundwater resources. The groundwater environmental baseline methodology required for the Division 37 Oregon Chemical Process Mining Permit is described in Oregon Administrative Rules (OAR) 632-037-0005 through 632-037-0155 and EM Strategies (2017). The methodologies also satisfy Oregon Department of Environmental Quality (ODEQ) requirements, described in Division 43, Chemical Mining (OAR 340-043-0000 through 340-043-0180).

The Work Plan has been developed under the criteria and/or guidelines established by the technical review team (TRT) assembled for the project, pursuant to Oregon Revised Statute (ORS) 517.967.

SPF has prepared this report in accordance with Oregon State Board of Geologist Examiners (OSBGE) general report guidelines (OSBGE 2014) for Paramount and Calico under SPF's contract dated August 2016.

3. SUMMARY OF INVESTIGATIONS

This section provides an inventory of the baseline study completion status.

3.1. Baseline and Background Study Completion Inventory

This report is intended to serve as a complete groundwater baseline data compilation and characterization for Grassy Mountain. Previous memorandums and reports submitted to the TRT providing additional details of the data collected include:

- Grassy Mountain Gold Project Water Resources Baseline Study 2013 Annual Sampling Report (SPF 2015a)
- Quarterly transmittal memorandums to the TRT for monitoring events performed between 2013 and 2018, including data collection forms, laboratory water quality reports, well water level and spring flow data, and photographs of the springs
- Revised Grassy Mountain Gold Project Surface Water Baseline Report (SPF, 2018a)
- Monitoring Well GMW17-32 Completion Report (SPF 2018b)
- GMW17-31, GMW17-33, and GMW18-34 Wells Completion Report (SPF 2018c)

Baseline and background monitoring efforts have consisted of the following investigations:

- Baseline monitoring of groundwater levels and groundwater quality at existing and newly installed wells.
- Baseline monitoring of flow and water quality at spring locations.
- Background monitoring of flow at spring and flowing well locations.

This report presents the baseline data collected in accordance with the Work Plan. The baseline data will be analyzed and interpreted in a subsequent Conceptual Groundwater Report.

4. WATER RESOURCES STUDY AREA

The Project is located in Malheur County, Oregon, approximately 22 miles south-southwest of Vale (Figure 1) and consists of two areas: the Mine and Process Area and the Access Road Area (Permit Area) (Figure 2).

The Mine and Process Area is located on three patented lode mining claims and unpatented lode mining claims that cover an estimated 886 acres. These patented and unpatented lode mining claims are part of a larger land position that includes 455 unpatented lode mining claims and nine mill site claims on lands administered by the Bureau of Land Management (BLM) (Figure 2). All proposed mining would occur on the patented claims, with some mine facilities on unpatented claims. The Mine and Process Area is in all or portions of Sections 5 through 8, Township 22 South, Range 44 East (T22S, R44E) (Willamette Meridian).

The Access Road Area is located on public land administered by the BLM, and private land controlled by others (Figure 2). A portion of the Access Road Area is a Malheur County Road named Twin Springs Road. The Access Road Area extends north from the Mine and Process Area to Russell Road, a paved Malheur County Road. The Access Road Area is in portions of Section 5, T22S, R44E, Sections 3, 10, 11, 14, 15,

21 through 23, 28, 29, and 32, T21S, R44E, Sections 1, 12 through 14, 23, 26, 27, and 34, T20S, R44E, Sections 6 and 7, T20S, R45E, and Sections 22, 23, 26, 35, and 36, T19S, R44E (Willamette Meridian). The width of the Access Road Area is 300 feet (150 feet on either side of the access road centerline) to accommodate possible minor widening or rerouting, and a potential powerline adjacent to the access road. There are several areas shown that are significantly wider than 300 feet on the Permit Area Map (Figure 2), which are areas where the final alignment has not yet been determined. The final engineering of the road will be consistent throughout, and within the Permit Area. The Access Road Area also includes a buffer on either side of the proposed road width for the collection of environmental baseline data. The road corridor will be approximately 30 feet wide. The Access Road Area totals approximately 876 acres.

The Water Resources Study Area (Study Area) was established to develop an environmental water resources baseline for assessing potential impacts from Project facilities and to provide background data on nearby springs and on the Owyhee River and Lake. The Study Area includes an area encompassing the Mine and Process Area and two separate, non-contiguous, areas on the Owyhee River/Lake. A map of the Study Area is included as Figure 3. All of the baseline well and spring sites are located within the Study Area.

Surface water baseline data characterization and analyses are described in the final revised Surface Water Baseline Report (SPF 2018a).

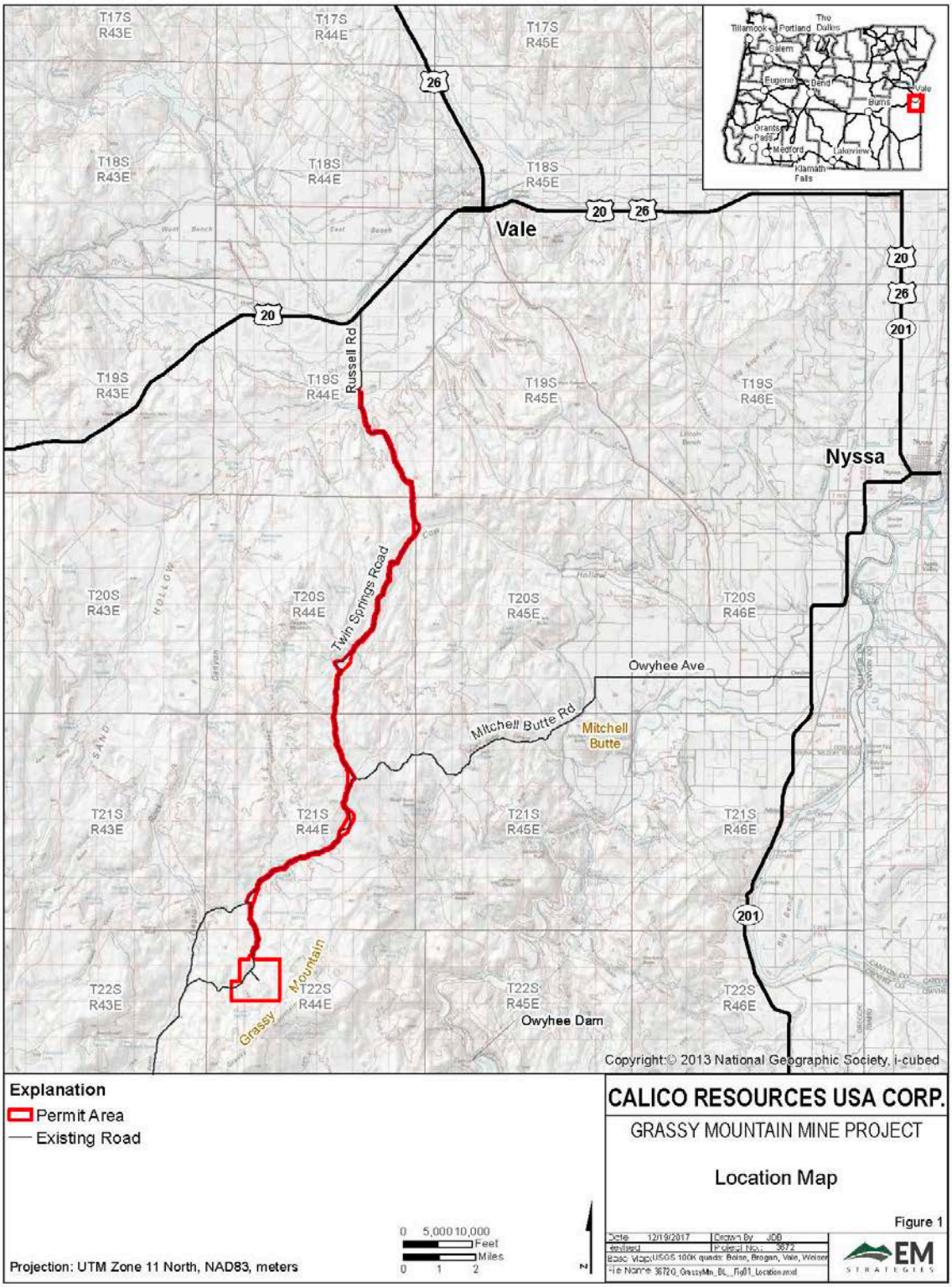

Figure 1. Project Location

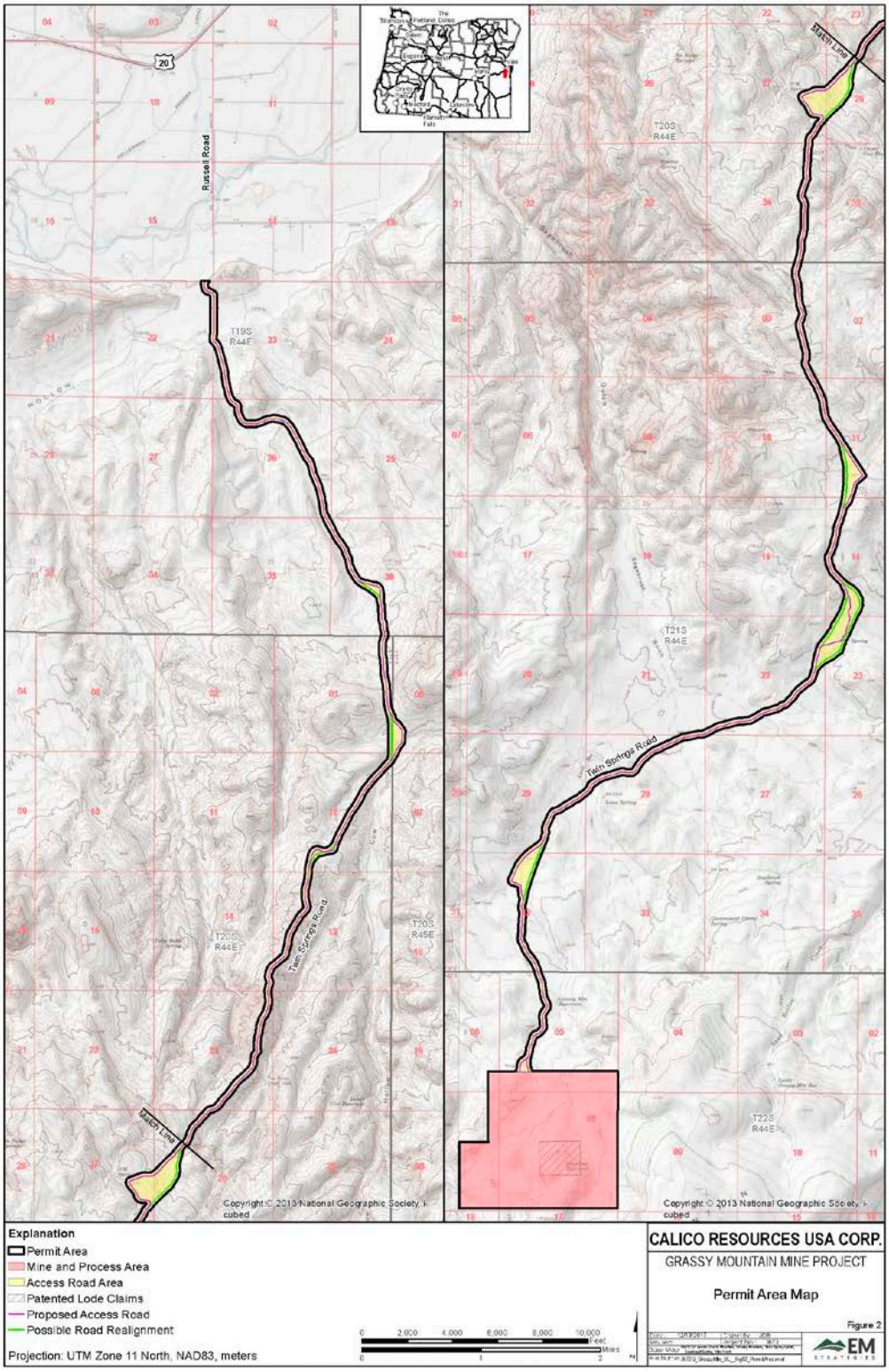

Figure 2. Permit Area

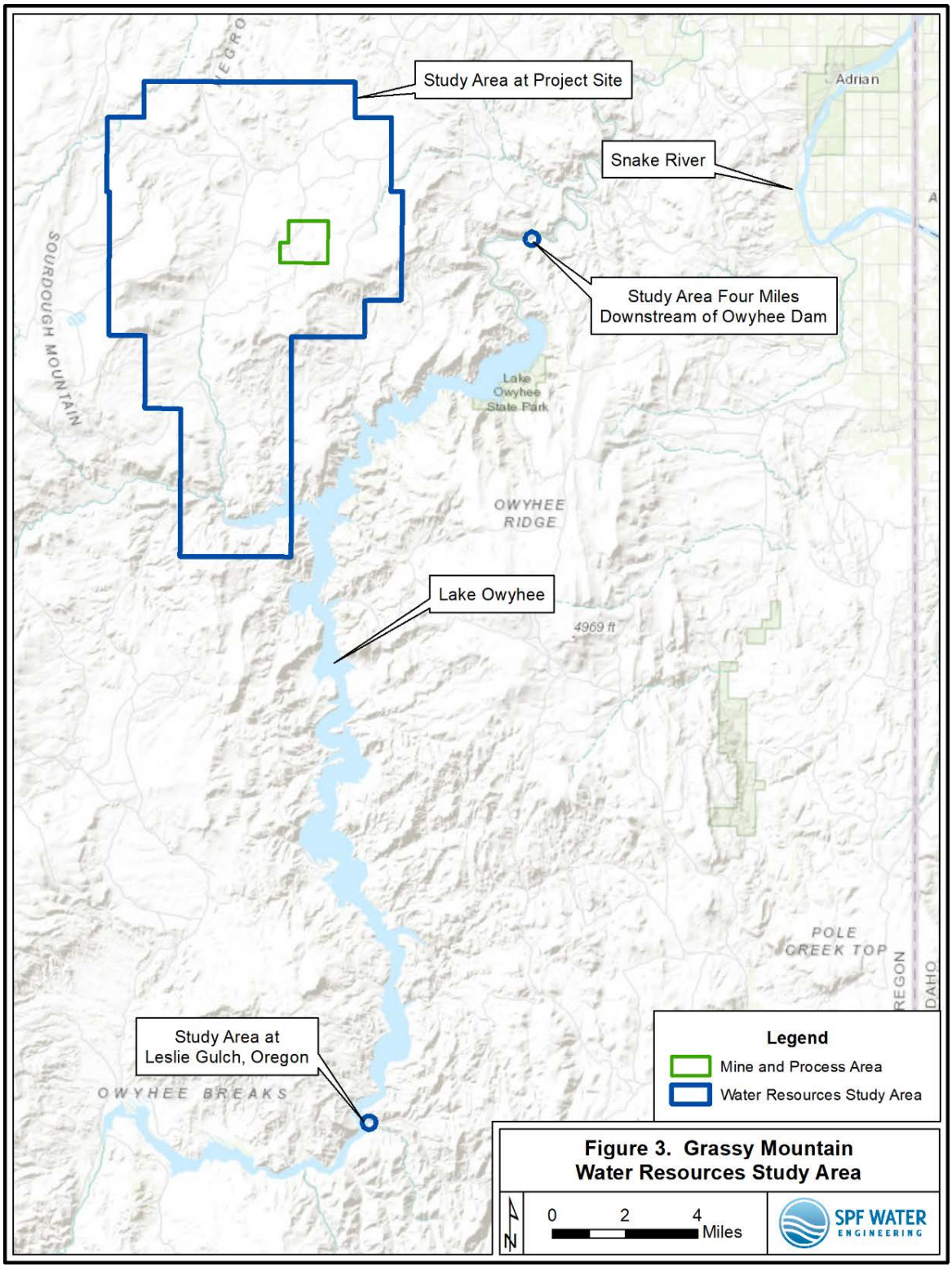

Figure 3. Grassy Mountain Water Resources Study Area

5. SAMPLING AND MONITORING EVENTS

5.1. Water Quality Sampling Events

Four (4) quarterly water quality sampling events occurred during 2013, in March (1st Quarter), June (2nd Quarter), August (3rd Quarter), and November (4th Quarter). Three (3) more quarterly sampling events occurred in 2014, in March (1st Quarter), June (2nd Quarter), and September (3rd Quarter).

The sampling schedule was in accordance with the Work Plan, with sampling conducted quarterly and with a minimum of three (3) weeks separating each sampling event. After seven (7) quarterly water quality sampling events, the TRT determined that adequate water quality data were collected from the shallow well monitoring network to satisfy baseline study requirements (Riggs 2016 included in Appendix A).

Groundwater level and water quality monitoring events in wells are summarized in Table B1 in Appendix B.

Outside the quarterly water quality sampling events, additional one-time sampling events occurred from well 59762 and from the recently constructed monitoring wells GMW17-32, and GMW17-33. These occurred in December of 2017 with additional development and sampling of GMW17-32 in July and December of 2018.

5.2. Spring Flow and Water Level Sampling Events

During each of the water quality sampling events described in Section 5.1, spring flow rates were measured and well/piezometer water levels were measured. With the exception of the 1st and 2nd Quarters of 2015[1], this flow and water level monitoring has continued on a voluntary, quarterly basis through the 3rd Quarter of 2018. This report includes all monitoring between 2013 and the 3rd Quarter of 2018.

In addition to the springs and wells used for water quality sampling purposes, flow rates from "background springs" and two flowing wells were measured on twice-yearly basis in 2013, 2014, and 2015.

Background and baseline monitoring events for springs and flowing artesian wells are summarized in Table B2 in Appendix B.

5.2.1. Continuous Water Level Measurements

During the 1st Quarter 2013 sampling event, water level pressure transducers and a barometric pressure logger were installed in three monitoring wells. The transducers collect continuous baseline water level data to provide a more complete description of seasonal groundwater level trends in the vicinity of the Project site.

[1] Due to a change in ownership of the project, no monitoring occurred during these two quarters.

6. SAMPLING SITES

6.1. Monitoring Wells

6.1.1. Water Level Monitoring and Water Quality Sampling Wells

Manual water level measurements and water quality samples were collected from eleven (11) monitoring wells during each of the quarterly sampling events. A twelfth well, Prod-1, is artesian so flow measurement and water quality samples were collected from this well. These wells are identified in Table B1 in Appendix B. A summary of all project well completion details is provided in Table 1 below and Table C1 in Appendix C. The location of these wells (labeled as Quarterly WL/WQ) are shown on Figure 4. This map includes the boundary of the approved Water Resources Study Area.

Once completed, new monitoring wells GMW17-32 and GMW17-33 were sampled once[2] for water quality and included in the quarterly water level monitoring, in accordance with the Final Work Plan for Grassy Mountain Monitoring Wells (SPF 2016b). Well 59762 was re-developed and sampled once for water quality in 2017. This well has also been monitored for water level on a quarterly basis since 2013. Details are in the well completion reports for GMW17-31, GMW17-32, GMW17-33, and GMW18-34 provided in Appendix K.

6.1.2. Manual Water Level Measurement Only Wells

In addition to the twelve (12) wells used for water level (or flow) and water quality monitoring, water levels were measured in an additional seven (7) monitoring wells during each of the quarterly sampling events. During the 2nd and 3rd Quarters of 2014, another five (5) monitoring wells were added to the program[3]resulting in twelve (12) additional wells. These wells are identified in Table B1 in Appendix B.

The location of the wells where only water level measurements were collected (labeled as Quarterly WL) is shown on Figure 4.

The additional twelve (12) wells were selected for water level monitoring and not used for water quality monitoring because either the well has been reported as unsuitable for water quality sampling (RMEC 2012, JMM 1991), the well has not been evaluated for condition in the last 20 years, or the well is considered to be redundant to a well that is being sampled (constructed similarly with similar water levels and located in close proximity to a well that is sampled). The additional (12) wells provide additional baseline water level data and to better define groundwater flow within the Study Area.

[2] GMW17-32 was actually sampled for water quality three times, but only the third and final results are considered baseline data and occurred after significant re-development of the well.
[3] These wells were identifed after a more thorough review of the historical record.

Calico Well ID	OWRD Well Tag Number	OWRD Name	Alternate Name	Drill Method	Depth of First Water (ft)	Well Const. Depth (ft)	Screened Interval (ft)	Well Casing Diameter (in)	TOC Elevation[4]	Elevation Screened Interval (ft)	Water Level Elevation (9/26/2018)	Production (gpm)[2]	Screened Lithology[1]
59760	107462	MALH 2974	Middle Sweizer, TW-1	air rotary	160	203	163-203	6	3762.1	3599-3559	3673.43	+10	fractured basalt
59761	109400	MALH 2993	Lower Sweizer, MW-2	air rotary	100	118	97-117	4	3762.2	3665-3645	3673.48	+50	fractured basalt
59762	109371	MALH 2976, 2985	MW-3	air rotary	626	700	550-660	4	3724.8	3175-3065	3103.4	<1	siltstone
59763	109356	MALH 2994	TW-4	air rotary	277	323	293-323	6	3519.4	3226-3196	3239.03	+5	fractured volcanics
59764	107466	MALH 2986	MW-5	air rotary	270	300	279-299	4	3511.9	3233-3213	3238.24	+10	fractured sandstone
59765		MALH 2979	MW-6	air rotary	29	36	28-36	4	3446.5	3418-3410	dry	dry	shallow sandstone
59766	107468	MALH 2980	MWS-8	air rotary	only damp when drilled	45	25-45	4	3459.7	3435-3415	3426.68	+10	shallow sandstone
59767		MALH 2995	MWS-9	air rotary	dry	40	20-40	4	3495.3	3475-3455	dry	dry	shallow sandstone
59768		MALH 54197	MWS-10	air rotary	21	25	10-25	4	3480.6	3471-3456	3463.46	0.5	shallow sandstone
59770		MALH 2983	MW-11	air rotary	dry when drilled	424	374-424	4	3389.0	3015-2965	3241.71	+0.5	volcanic tuff
59772	109352	MALH 2984	Upper Sweizer, MWS-13	air rotary	125	207	165-205	4	3768.2	3603-3563	3673.5	+50	fractured basalt
26-092-915	109354	MALH 54071		unknown	unknown	915	228-268	2	3710.0	3482-3442	3633.55	unk	unk
57-1		MALH 54195		unknown	unknown	765	108-138	1.25	3770.6	3663-3633	3699.1	unk	unk
57-10		MALH 54196		unknown	unknown	500	126-156	1	3681.1	3555-3525	3635.67	unk	unk
89-2	109360	MALH 54072		unknown	200	425	386-406	2	3293.5	2907-2887	3235.54	unk	unk
Bishop	None	MALH 54046	Rye Field	cable	unknown	482	135-145	12	3391.5	3257-3247	3281	50	coarse gravel
BLM	109398	MALH 2277	Owyhee Ridge	cable	unknown	175	159-166	6	3579.6	3421-3414	3423.95	+12	white sand
GMW17-31	125168	MALH 54404		air rotary	dry when drilled	498	458-498	5	3722.0	3262-3222	3222.6	0	siltstone, sinter, clay
GMW17-32	125169	MALH 54405		air rotary	244	718	678-718	5	3702.1	3026-2986	3082.1	<1	Arkose, siltstone, Clay
GMW17-33	125170	MALH 54406		air rotary	243	338	238-338	5	3702.7	3465-3365	3452.16	<30	sinter, siltstone, tuff
GMW18-34	130031	MALH 54437		air rotary	dry	950	830-890	5	3953.3	3127-3067	dry	dry	Arkose, siltstone, Clay
GW-1	107469	MALH 2281	47-1	air rotary	140	155.5	135.5-155.5	4	3709.1	3573.5-3553.5	3654.18	60	gravel
GW-2	109357	MALH 2279	47-2	air rotary	dry when drilled	325	290-320	4	3827.5	3537-3507	3662.91	0	blue and grey clay
GW-3	107467	MALH 2278	47-3	air rotary	dry when drilled	350	320-350	4	3633.6	3314-3284	3401.68	<1	blue and grey clay
GW-3A		MALH 2579		air rotary	dry	420	380-420	2	3655	3275-3235	dry	dry	silt and clay
GW-3B		MALH 2576		air rotary	dry	340	80-100	2	3626	3546-3526	dry	dry	clay
GW-4	107460	MALH 54073		unknown	50	370	280-350	4	3342.7	3063-2993	3260.85	100	sandstone, congl, clay
GW-5		MALH 54194		air rotary	unknown	265	204-224	2	3413.0	3209-3189	3221.45	<1	tuff, clay
GW-6	109368	MALH 2578		air rotary	145	340	300-340	2	3377.3	3077-3037	3236.16	3-4	sandstone, congl, clay
Prod 1	107457	MALH 2275, 2511		air rotary	145	425	145-255, 325-355, 380-420	6	3436.4	3291-3181, 3111-3081, 3056-3016	3436.41	30-100[3]	sandstone, blue clay, and hard sandstone
PW-1	109353	MALH 2276		air rotary	320	520	320-340, 400-420	6	3709.1	3389-3369, 3309-3289	3654.66	25-35[3]	brown clay and sand; coarse sandstone
PW-4	109351	MALH 2206		air rotary	280	375	280-300, 340-360	6	3341.4	3061-3041, 3001-2981	3261.39	175-250[3]	sandstone and conglomerate

1 - as reported on the drillers log
2 - based on short-term testing by driller during or following construction
3 - based on long-term test pumping
4 - surveyed with the exception of GW-3A, GW-3, GMW-17-31, GMW17-32, GMW17-33, and GMW18-34

Table 1. Well Completion Details

Two recently completed monitoring wells, GMW17-31 and GMW18-34, were dry at the time of completion. Months after completion less than a foot of water was measured in GMW17-31. GMW18-34 has remained dry.

There are also two (2) other monitoring wells known to be dry, these are 59765 (MW-6, OWRD well tag number 109355) and GW-3A. These wells, labeled as dry, are shown on Figure 4.

6.1.3. Continuous Water Level Measurements

The wells selected for continuous water level measurements have varying completion depths and groundwater elevations, and are dispersed throughout the Study Area to collect water level data from different water-bearing zones within the aquifer. The wells used for continuous water level monitoring are identified in Table B1 in Appendix B.

6.2. Springs

6.2.1. Baseline Springs

During each quarterly sampling event, a total of eleven (11) springs (baseline springs) were visited within the Study Area. These baseline springs are listed in Table B2 in Appendix B and locations are shown on Figure 4. Flow was measured, water quality samples collected if there was adequate spring flow present, and photographs were taken during each quarterly event. All of the baseline springs were sampled at least once for water quality except for Grassy Spring, where there was insufficient flow for sampling (flows were always <0.05 gpm). Table B2 in Appendix B identifies those springs with adequate flow for sampling during each quarterly event.

6.2.2. Background Springs

There are sixteen (16) additional springs located within the Study Area that are identified as background springs in the Work Plan. Photographs were taken of each of these springs, and flow measured if observed and a suitable location exists for measuring the flow. The background springs are listed in Table B2 in Appendix B and locations are shown on Figure 5.

6.3. Flowing Wells

There are two flowing wells located within the Study Area that are also identified as background monitoring locations. These wells are the Darky Rock Well and the Flowing Well. Photographs were taken and flow measured from these wells. These two wells are shown on Figure 5.

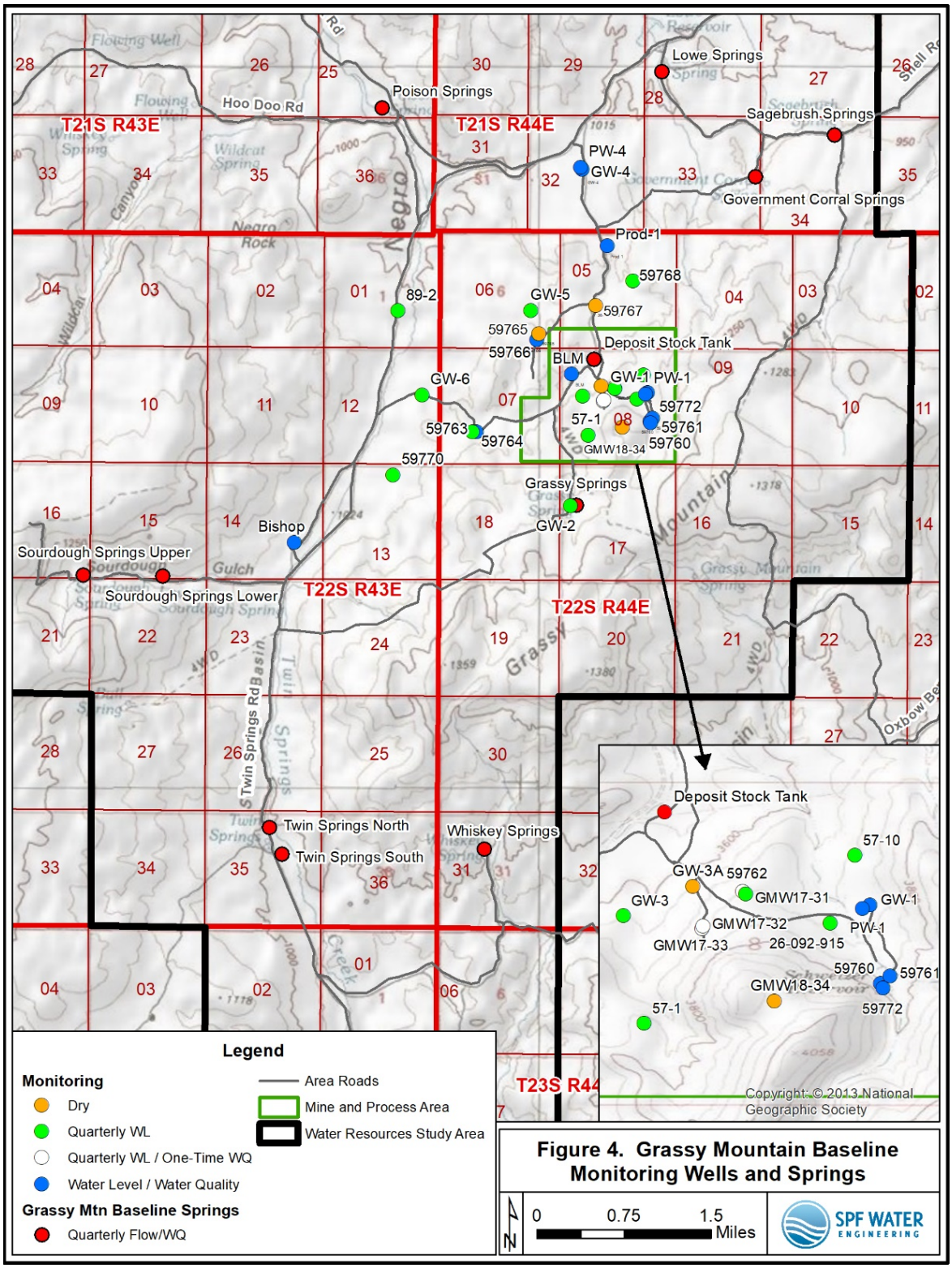

Figure 4. Grassy Mountain baseline monitoring wells and springs

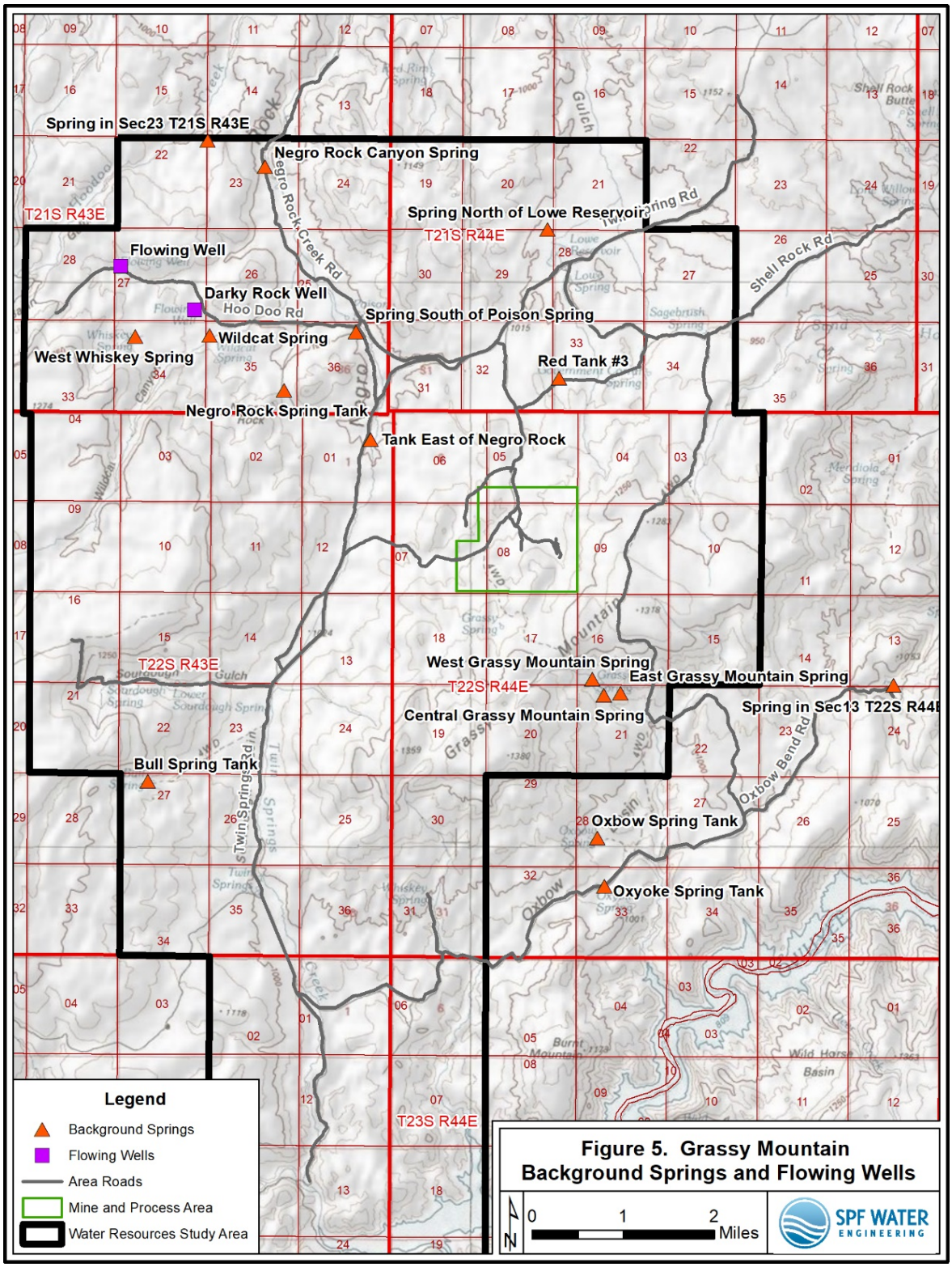

Figure 5. Grassy Mountain background springs and flowing wells

7. DATA COLLECTION METHODS

7.1. Overview of Methods

Standard hydrologic field procedures and methodologies were utilized to ensure accurate and reliable data collection. Sampling and monitoring procedures followed the guidelines detailed in the approved Work Plans. Where applicable, sampling procedures followed the ODEQ Field Sampling Reference Guide (ODEQ 2010) and the ODEQ Water Monitoring and Assessment Mode of Operations Manual (ODEQ 2009).

Quality assurance and quality control (QA/QC) are an important component of the monitoring program. QA/QC guidelines for the sampling event are described in the approved Work Plans and followed QA/QC protocols described in the ODEQ Water Monitoring and Assessment Mode of Operations Manual (ODEQ 2009) and the ODEQ Quality Manual (ODEQ 2011).

Specific QA/QC methods included collection of equipment blanks, transfer blanks, and duplicate samples. The laboratory performed internal QA/QC procedures, with results from each quarter included in the Level 2 analytical report prepared by the laboratory. The Level 2 analytical report also includes a case narrative, analytical results, data qualifiers, sample receipt checklist, and chain of custody forms. The Level 2 analytical report for each event was submitted to the TRT following each event and copies are included in Appendix H.

To ensure consistency, data collection forms were developed and utilized for recording field data and documenting equipment calibration procedures. Copies of the completed field forms from each quarterly sampling event are included in Appendix J. Data collection forms were transmitted to the TRT in a PDF format following each quarterly sampling event.

A brief overview of sampling procedures is described in the Sections below. Detailed sampling is provided in the Work Plans.

7.2. Description of Sampling Sites

Monitoring wells were described on field sampling forms (Appendix J), including casing diameter, casing height, completed depth, a description of the water level measurement point and well condition. Spring sources, sampling points, and associated stock tanks or ponds were described on sampling forms (Appendix J). Well water level measurement points and spring sampling points have been photographed. Additional photographs of every spring were taken during each sampling event to document flow conditions. Photographs were provided in the quarterly TRT submittals.

The locations and elevations (ground surface and measurement points) of monitoring wells and baseline springs were identified using survey-grade GPS by CK3 LLC in early May 2014. The coordinates and measurement point elevations are listed in Table 2 below, in State Plane Coordinates Oregon South International Feet, NAVD 88. For the

new monitoring wells, locations were surveyed prior to well construction. Final surveys of these wells are anticipated in the future.

Background springs have been located using a non-survey grade GPS unit, and coordinates are listed Table 2 in below.

Type	Site Name	Northing (ft, OR State Plane South)	Easting (ft, OR State Plane South)	MP Elevation (ft asl)
Monitoring Wells	59760	745645.981	5753551.517	3762.10
	59761	745772.825	5753658.537	3762.22
	59762	747093.548	5751854.980	3724.79
	59763	744833.301	5745691.957	3519.42
	59764	744814.369	5745502.507	3511.86
	59765	749408.542	5748338.635	3446.47
	59766	749128.353	5748254.792	3459.75
	59767	750823.434	5750882.309	3495.26
	59768	751987.933	5752488.768	3480.58
	59770	742710.937	5741955.406	3388.98
	59772	745572.389	5753583.613	3768.16
	26-092-915	746617.799	5752915.771	3710.00
	57-1	744890.820	5750760.310	3770.64
	57-10	747741.058	5753164.928	3681.14
	89-2	750181.789	5741874.789	3293.50
	Bishop	739450.422	5737602.762	3391.51
	BLM	747633.586	5749895.135	3579.64
	GW-1	746929.696	5753379.246	3709.10
	GW-2	741642.053	5750108.395	3827.46
	GW-3	746644.651	5750449.625	3633.59
	GW-3A	747154.659	5751260.753	3657.50
	GW-4	756961.961	5749996.486	3342.71
	GW-5	750443.408	5747915.292	3412.98
	GW-6	746405.775	5743134.903	3377.33
	Prod-1	753540.873	5751275.237	3436.41
	PW-1	746870.021	5753289.854	3709.10
	GMW17-31	747062.1437	5751890.41	3722.00
	GMW17-32	746507.8151	5751400.075	3702.00
	GMW17-33	746468.9358	5751387.606	3702.70
	GMW18-34	745311.4955	5752293.667	3953.26
	PW-4	757070.919	5749908.325	3341.40
Baseline Springs	Deposit Stock Tank	748376.460	5750879.694	3552.77
	Government Corral	756975.556	5757863.847	3456.01
	Grassy Spring	741738.614	5750275.765	3822.84
	Lowe Spring	761799.478	5753456.679	3278.96
	Poison Spring	759368.751	5740634.211	3213.85
	Sagebrush Spring	759029.757	5761380.835	3481.86
	Sourdough Lower	737582.250	5731598.434	3565.36
	Sourdough Upper	737587.997	5728058.732	3754.05
	Twin Springs North	726474.288	5737016.696	3240.02
	Twin Springs South	725277.033	5737632.836	3210.32
	Whiskey Spring	725895.946	5746824.847	3230.04
Background Springs and Wells (corrdinates from non-survey grade GPS, elevations estimated using Goole Earth)	Bull Spring Tank	731798.684	5730323.895	3727
	Central Grassy Mountain Spring	737920.331	5756588.347	3489
	Dark Rock Well	756210.058	5732296.357	3391
	East Grassy Mountain Spring	738055.897	5757538.706	3489
	Flowing Well	761550.474	5727332.014	3532
	Negro Rock Canyon Spring	767800.835	5735633.314	3117
	Negro Rock Spring Tank	754844.533	5737277.024	3319
	Oxbow Spring Tank	729591.481	5756563.613	3065
	Oxyoke Spring Tank	726801.090	5757094.644	3029
	Red Tank #3	756212.707	5753206.759	3389
	Spring in Sec13 T22S R44E	739203.805	5773378.134	3005
	Spring in Sec23 T21S R43E	769162.951	5732244.787	3297
	Spring North of Lowe Reservoir	764826.923	5752193.554	3247
	Spring South of Poison Spring	758410.107	5741317.082	3232
	Tank E of Negro Rock	752204.327	5742408.207	3273
	West Grassy Mountain Spring	738802.552	5755880.217	3619
	West Whiskey Spring	757611.371	5728513.411	3547
	Wildcat Spring	757839.970	5732821.848	3366

Table 2. GPS Coordinates Background of Wells and Springs

7.3. Water Level Measurements

At each of the monitoring wells the static water level was measured and recorded prior to purge pumping (if sampled) using a calibrated or non-stretch electric-line well sounder. To ensure consistency of water level measurements, measurement points were clearly identified on both the sampling form and physically on the well casing. Water level data (raw and calibration-adjusted) for each quarter are discussed in Section 0.

During the 1st and 2nd Quarter events in 2013, the static water level in a well was measured immediately before pumping that well, but interference effects from pumping nearby wells were not anticipated. An evaluation of continuous water level data following the 2nd Quarter download of the transducers installed in monitoring wells GW-1 and GW-4 revealed interference effects from nearby wells (PW-1 and PW-4). Therefore, during the remaining sampling events, wells that were in close proximity to each other (i.e. less than 500 feet) were measured for static water level prior to purge pumping nearby wells to eliminate any interference effects.

7.4. Continuous Water Level Measurements

Recording water level pressure transducers were installed in GW-1, GW-2, and GW-4 on March 26, 2013, during the 1st Quarter sampling event. The transducers are suspended in each well from stainless steel cable that is attached at the well head. Transducers were temporarily removed from the wells for downloading during each subsequent quarterly event. Immediately after removing the pressure transducer from a well, the static water level was measured using a calibrated or non-stretch electric-line well sounder. This static water level measurement, along with the pressure transducer reading (height of water above the transducer), was used to establish the depth of the pressure transducer relative to the top of the well casing. To obtain an accurate height of water above the transducer, the raw pressure data downloaded from the transducer was corrected for variations in atmospheric pressure using barometric data collected from a centrally located barometric pressure transducer installed in GW-1.

Once the depth of the pressure transducer is established, then all prior transducer readings are converted to static water levels measured relative to the top of the well casing. Pressure transducers were downloaded on a quarterly basis, and each download coincided with a manual water level measurement to re-calculate pressure transducer depth.

Following the download of the transducers during the 2nd Quarter of 2013, interference effects were observed in GW-1 and GW-4. Therefore, static water levels taken during the 1st and 2nd Quarters in 2013, taken after and influenced by purging nearby wells, cannot be reliably used to establish the depth of the transducer. During the remainder of the sampling, any interference was mitigated by measuring static water levels prior

to purging nearby wells, so these measurements can be used to determine transducer depth and calculate static water levels.

The continuous water level data were collected at 1-hour intervals between the 1st Quarter and 2nd Quarter sampling events of 2013. To comply with the specific requirements of the approved Work Plans, the sampling interval was changed to 30 minutes during the 2nd Quarter sampling event of 2013.

Specific information on each transducer install is provided below:

7.4.1. GW-1 Water Level and Barometric Pressure Transducers

Solinst Levelogger Edge (Model 3001) and Barologger Edge (Model 3001) pressure transducers were installed in GW-1. The Levelogger has a full-scale measurement of 32.8 feet (10 meters) and was installed on stainless steel cable to a depth of approximately 68 feet below ground level. The Barologger was installed in GW-1 at approximately ground level to measure atmospheric pressure, which is used to correct water level observations for the effects of atmospheric pressure.

7.4.2. GW-2 Water Level Transducer

A Solinst Levelogger Edge (Model 3001) pressure transducer was installed in GW-2. The Levelogger has a full-scale measurement of 32.8 feet (10 meters) and was installed on stainless steel cable to a depth of approximately 178 feet below ground level.

7.4.3. GW-4 Water Level Transducer

A Solinst Levelogger Edge (Model 3001) pressure transducer was installed in GW-4. The Levelogger has a full-scale measurement of 32.8 feet (10 meters) and was installed on stainless steel cable to a depth of approximately 97 feet below ground level.

7.5. Spring Flow Measurement

The flow from each spring was measured where a suitable location for measuring flow existed. Typically, this location was a pipe from the spring that terminates at a stock tank. Flow was measured using a container of known volume and a stopwatch. Flow measurements were taken without altering the spring or disturbing the area around the spring. Spring flow measurements are presented in Section 9.1.

7.6. Water Quality Analytes

A list of water quality analytes was approved in the Work Plans. The analytes include primarily metals (total and dissolved) and general geochemical parameters. During the 2013 sampling period, changes were made to the list of analytes as described below:

- Total and dissolved uranium were added to the analyte list following the 1st Quarter sampling event at the request of the TRT.

- Following the 1st Quarter sampling event, the TRT approved the substitution of combined nitrate+nitrite for nitrate and nitrite due to the difficulty in meeting the 48-hour hold time for nitrate and nitrite (Lynch 2013).
- The TRT approved removing inorganic arsenic from the list of analytes (Lynch 2013).
- The final approved list of water quality constituents is included in Table 3 along with the laboratory testing method, the laboratory detection limit, and the reporting limit. For metals, samples for both total and dissolved metals were collected. For the other parameters, only total samples were collected. The preservatives used by the laboratory and the recommended holding times for each testing method are summarized in Table 4.

Parameter	Laboratory Method of Analyses	Detection Limit	Reporting Limit	Sample Type
Aluminum, Al	EPA 200.7	0.03 mg/L	0.15 mg/L	total and dissolved
Total Arsenic	EPA 200.8	0.0002 mg/L	0.001 mg/L	total and dissolved
Barium, Ba	EPA 200.7	0.003 mg/L	0.015 mg/L	total and dissolved
Cadmium Low	EPA 200.8	0.0001 mg/L	0.0005 mg/L	total and dissolved
Calcium, Ca	EPA 200.7	0.2 mg/L	1 mg/L	total and dissolved
Chromium Low	EPA 200.8	0.0005 mg/L	0.002 mg/L	total and dissolved
Copper Low	EPA 200.8	0.0005 mg/L	0.0025 mg/L	total and dissolved
Iron, Fe	EPA 200.7	0.02 mg/L	0.05 mg/L	total and dissolved
Lead Low	EPA 200.8	0.0001 mg/L	0.0005 mg/L	total and dissolved
Magnesium, Mg	EPA 200.7	0.2 mg/L	1 mg/L	total and dissolved
Manganese Low	EPA 200.8	0.0005 mg/L	0.0025 mg/L	total and dissolved
Mercury, Hg (Low Level)	1631E	0.2 ng/L	0.5 ng/L	total and dissolved
Nickel Low	EPA 200.8	0.0006 mg/L	0.003 mg/L	total and dissolved
Potassium, K	EPA 200.7	0.3 mg/L	1.5 mg/L	total and dissolved
Selenium Low	EPA 200.8	0.0001 mg/L	0.00025 mg/L	total and dissolved
Silver Low	EPA 200.8	0.00005 mg/L	0.00025 mg/L	total and dissolved
Sodium, Na	EPA 200.7	0.3 mg/L	1.5 mg/L	total and dissolved
Zinc, Zn	EPA 200.7	0.01 mg/L	0.05 mg/L	total and dissolved
Antimony	EPA 200.8	0.0004 mg/L	0.002 mg/L	total and dissolved
Beryllium	EPA 200.8	0.00005 mg/L	0.00025 mg/L	total and dissolved
Bismuth	EPA 200.7	0.04 mg/L	0.2 mg/L	total and dissolved
Boron	EPA 200.8	0.0005 mg/L	0.001 mg/L	total and dissolved
Cobalt	EPA 200.8	0.00005 mg/L	0.00025 mg/L	total and dissolved
Gallium	EPA 200.7	0.1 mg/L	0.5 mg/L	total and dissolved
Lithium	EPA 200.7	0.02 mg/L	0.1 mg/L	total and dissolved
Molybdenum	EPA 200.8	0.0005 mg/L	0.0025 mg/L	total and dissolved
Scandium	EPA 200.7	0.1 mg/L	0.5 mg/L	total and dissolved
Strontium	EPA 200.7	0.01 mg/L	0.05 mg/L	total and dissolved
Thallium	EPA 200.8	0.0001 mg/L	0.0005 mg/L	total and dissolved
Tin	EPA 200.8	0.0004 mg/L	0.002 mg/L	total and dissolved
Titanium	EPA 200.7	0.005 mg/L	0.025 mg/L	total and dissolved
Vanadium	EPA 200.8	0.0002 mg/L	0.001 mg/L	total and dissolved
Uranium	EPA 200.8	0.0001 mg/L	0.0005 mg/L	total and dissolved
Nitrate+Nitrite (as N)	EPA 353.2	0.02 mg/L	0.1 mg/L	total
Ammonia Direct (as N)	EPA 350.1	0.05 mg/L	0.5 mg/L	total
Alkalinity	SM 2320B	2 mg/L	20 mg/L	total
Bicarbonate	SM 2320	2 mg/L	20 mg/L	total
Carbonate	SM 2320	2 mg/L	20 mg/L	total
Chloride, Cl	EPA 300.0	0.5 mg/L	2.5 mg/L	total
Conductivity	SM 2510B	1 umhos/cm	10 umhos/cm	total
Cyanide, Total	EPA 335.4	0.003 mg/L	0.01 mg/L	total
Cyanide, Weak Acid Digestion	SM 4500	0.003 mg/L	0.01 mg/L	total
Fluoride, F	EPA 300.0	0.1 mg/L	0.5 mg/L	total
Hardness	SM 2340 B	calc	calc	total
pH	SM 4500-H B	0.1 C	0.1 C	total
Sulfate, SO4	EPA 300.0	0.5 mg/L	2.5 mg/L	total
Total Dissolved Solids	SM 2540C	10 mg/L	20 mg/L	total
Total Suspended Solids	SM 2540D	5 mg/L	20 mg/L	total
Total Phosphorus	EPA 365.1	0.01 mg/L	0.05 mg/L	total

Table 3. List of Water Quality Analytes

Parameter	Laboratory Method of Analyses	Hold Time	Preservative	Bottle Type
Aluminum, Al	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Total Arsenic	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Barium, Ba	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Cadmium Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Calcium, Ca	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Chromium Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Copper Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Iron, Fe	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Lead Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Magnesium, Mg	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Manganese Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Mercury, Hg (Low Level)	1631E	90 Days	5mL HCl	250 mL borosilicate glass
Nickel Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Potassium, K	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Selenium Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Silver Low	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Sodium, Na	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Zinc, Zn	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Antimony	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Beryllium	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Bismuth	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Boron	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Cobalt	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Gallium	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Lithium	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Molybdenum	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Scandium	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Strontium	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Thallium	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Tin	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Titanium	EPA 200.7	6 Months	2mL 50% HNO3	250 mL HDPE
Vanadium	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Uranium	EPA 200.8	6 Months	2mL 50% HNO3	250 mL HDPE
Nitrate+Nitrite (as N)	EPA 353.2	28 Days	2mL 25% H2SO4	250 mL HDPE
Ammonia Direct (as N)	EPA 350.1	28 Days	None	250 mL HDPE
Alkalinity	SM 2320B	14 Days	None	500 mL HDPE
Bicarbonate	SM 2320	14 Days	None	500 mL HDPE
Carbonate	SM 2320	14 Days	None	500 mL HDPE
Chloride, Cl	EPA 300.0	28 Days	None	250 mL HDPE
Conductivity	SM 2510B	28 Days	None	500 mL HDPE
Cyanide, Total	EPA 335.4	14 Days	5 mL 10N NaOH	500 mL HDPE
Cyanide, WAD	SM 4500	14 Days	5 mL 10N NaOH	500 mL HDPE
Fluoride, F	EPA 300.0	28 Days	None	250 mL HDPE
Hardness	SM 2340 B	NA	NA	NA
pH	SM 4500-H B	*	None	500 mL HDPE
Sulfate, SO4	EPA 300.0	28 Days	None	250 mL HDPE
Total Dissolved Solids	SM 2540C	7 Days	None	500 mL HDPE
Total Suspended Solids	SM 2540D	7 Days	None	500 mL HDPE
Total Phosphorus	EPA 365.1	28 Days	2mL 25% H2SO4	250 mL HDPE

*Perform in field within 15 minutes of sample collection. Laboratory analyses of pH are considered estimated.

Table 4. List of Water Quality Analytes, Hold Times, and Preservatives

7.7. Pump Installation and Sampling Manifold

7.7.1. Permanent Pumps

To eliminate the potential for cross contamination of water quality samples, permanent pumps were installed in all quarterly sampled monitoring wells with the exception of 59760, Bishop, and PW-1 which have existing pumps and Prod-1 which is an artesian well. The new monitoring wells GMW17-32 and GMW17-33, along with 59762, were sampled during test pumping in accordance with the Final Work Plan for Grassy Mountain Monitoring Wells (SPF 2016b).

Installation of the eight dedicated pumps occurred prior to the 1st Quarter 2013 sampling event. Detailed information on these pumps is provided in the Work Plans and recorded on the field forms, including motor horsepower, design flow and head, drop pipe diameter, and setting depth. Sanitary well seals and water level sounding tubes were also installed at the time of the pump installations.

Prior to installation of the permanent pumps, all of the pumps, drop pipe, and sounding tubes were cleaned with a non-phosphate detergent and rinsed with deionized water. An equipment blank was collected from one of the pump setups by pumping from a 30-gallon container of deionized water. The equipment blank was collected to evaluate the effectiveness of the decontamination procedure and to assess any potential contamination resulting from the pump and associated equipment. A transfer/equipment blank was also collected directly from the 30-gallon container of deionized water to determine if the deionized water was contaminated prior to pumping through the equipment. Results are presented in Section 10.4.

7.7.2. Sampling Manifold

To allow for water quality sampling directly from the pump discharge, a two-part sampling manifold was connected to the pump drop pipe above the casing; see Photo 1 for a photograph of a typical installation.

The laboratory sampling portion of the manifold is dedicated to each monitoring well and consists of a Schedule 80 PVC tee, with the horizontal leg fitted with a PVC ball valve and barbed plastic fitting. Disposable silicone tubing was connected to the barbed fitting for filling sample bottles during water quality sampling; additionally, a 0.45-μm disposable filter was attached to the end of the tubing for collection of filtered samples.

The field sampling portion of the manifold is also PVC and connects to the top leg of the PVC tee. This non-dedicated portable apparatus was used for the sampling of each pumped quarterly sampled well. The field sampling apparatus allows for measurement of field water quality parameters directly from the pump discharge and also provides an outlet for bypass and purge flows from the pump. The field sampling portion of the manifold was only used for measuring field water quality parameters; the water collected for laboratory analyses was diverted upstream at the PVC tee at the well head.

For the wells sampled during test pumping (GMW17-32, GMW17-33, and 59762), similar sampling manifolds were used that allowed for field water quality sampling and laboratory water quality sampling.

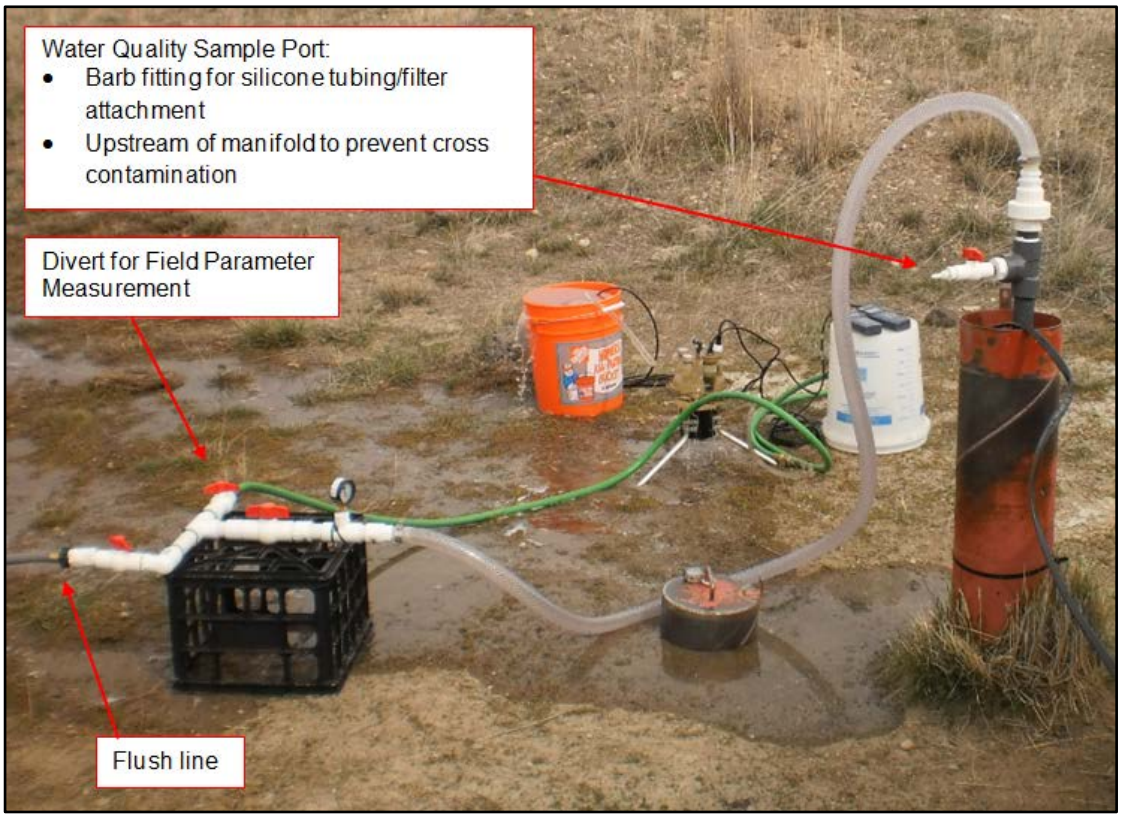

Photo 1. Discharge testing manifold

7.8. Monitoring Well Water Quality Data Collection Method

7.8.1. Purge Pumping

All of the monitoring wells were purged a minimum of three (3) casing volumes of water from the well prior to sampling; purging is a standard practice to remove stagnant water prior to ground water sample collection. Purge water was discharged to waste at the well site. During purge pumping, the pumping rate was measured using a five-gallon bucket and stopwatch. Pumping rate and volume were recorded on the field data collection form (see Appendix J). Additionally, field water quality parameters were measured as described in Section 7.8.2 and water quality samples were collected as described in Section 7.8.3. The appearance and odor of the purged water were also

noted. The well Prod-1 continuously flows by artesian pressure, this well was not purged and samples were collected directly from the artesian flow.

7.8.2. Field Water Quality Parameters

Purge water was discharged from the pump into the sampling manifold and through a Geotech multiprobe flow container, which allows for continuous measurement of field parameters (pH, temperature, electrical conductivity, and specific conductance) without significant aeration of the sample. These field parameters were monitored continuously during purging to ensure parameters were stable prior to sampling. Parameters are considered stable when consecutive measurements taken one (1) casing volume apart meet the following conditions: temperature within one (1) degree Celsius, pH within 0.3 standard pH units, and specific conductance measurements within 10% of each other (ODEQ 2009). Dissolved oxygen was measured in a separate purge water container (clean plastic bucket). At least three measurements of field water quality data were recorded on the data collection form.

The field equipment that was used for measuring field water quality parameters is listed below, along with the equipment calibration procedure[4]. Personnel performing equipment calibration were adequately trained. Results of calibration were recorded on calibration forms included in Appendix J.

- The pH (S.U.) was measured using a YSI EcoSense Model pH100 meter. Calibration was performed according to manufacturer recommendations on the morning of each sampling day. A 2-point calibration was performed using pH 4, 7, or 10 standard solutions.
- Electrical Conductivity and Specific Conductance (SC, µS/cm @ 25ºC) were measured using a YSI EcoSense Model EC300 meter. Calibration was performed according to manufacturer recommendations using a known standard on the morning of each sampling day.
- Temperature (°C) was measured using the YSI Model EC300 meter.
- Dissolved Oxygen (mg/L) was measured using an OxyGuard Handy Polaris 2 Portable DO meter. This DO meter was automatically calibrated if the initial dissolved oxygen saturation reading was below 100%.

7.8.3. Water Quality Sample Collection

Water quality samples were collected following purging with permanent dedicated pumps using the sampling manifold described in Section 7.6.2. A piece of disposable silicone tubing was connected to the dedicated barbed fitting for collecting samples. This tubing was used once and then discarded. For dissolved samples, samples were filtered in the field using a disposable high-capacity field filter with 0.45 µm membrane (Geotech dispos-a-filter with Versapor membrane) connected directly to the disposable

[4] For GMW17-32, GMW17-33, and 59762, a YSI Pro-Plus was used for field water quality. The instrument was calibrated before use.

silicone tubing. Sampling from the continuously flowing artesian well (Prod-1) was conducted in the same manner as spring water samples; see Section 7.8.

Samples were collected in bottles supplied by the laboratory with the appropriate preservative as required by the testing method. Samples were taken by field personnel wearing nitrile gloves discarded after each use. Following collection, sample bottles were properly labeled with the Calico well name, date, time, and preservative; a notation was provided to show if the sample was field-filtered. The sample bottles were immediately packed in a cooler with ice packs. Samples were mailed to ACZ Laboratories (ACZ) in Colorado with proper chain of custody documentation. Copies of the chain-of-custody are included in Appendix H. This laboratory is accredited by NELAP (National Environmental Laboratory Accreditation Program) for water analysis. Analytical methods meet ODEQ reporting and detection limits.

7.8.4. Sample Preservation Practices

The State of Oregon's Field Sampling Reference Guide (DEQ86-LAB-0002-QAG) and corresponding EPA method guidelines recommend that samples not containing a preservative, those preserved with sulfuric acid, and those preserved with sodium hydroxide be cooled to and maintained between 0°C and 6°C until arrival to the laboratory for processing.

Due to ACZ receiving samples above the recommended temperature, revised sample preservation practices were proposed as required by the TRT (Lynch 2014a). The proposed practices included higher-grade ice chests along with expedited (UPS Next Day Air) shipping practices. The TRT approved the revised preservation practices (Lynch 2014b), and these were implemented prior to the 1st Quarter 2014 sample period. All subsequent samples arrived at the laboratory at the recommended preservation temperatures, between 0°C to 6°C. The new preservation practices were successful in maintaining samples below the recommended temperature threshold.

7.8.5. Quality Assurance / Quality Control

Field duplicate samples were collected at a 10% sampling frequency (one duplicate for 12 wells) during each sampling event for quality assurance purposes and to measure precision between samples. An equipment and transfer blank was collected from one of the permanent pump setups prior to installation. The QA/QC results are summarized in Section 10.4.

In addition to field QA/QC, ACZ performed internal QA/QC procedures described in the Level 2 analytical report prepared by the laboratory for each sampling event. The Level 2 analytical reports for each quarterly event are included in Appendix H.

At least two mercury transfer blanks were collected in the field during each quarterly sampling event and submitted to the laboratory for mercury analysis.

The EPA Method 1669 is the recommended procedure for collecting water quality samples for trace metals at EPA Water Quality Criteria Levels. This method is

performance based, and alternative procedures may be used provided that the collection and analysis of blank samples is used to verify the accuracy of sampling procedures. Method 1669 does not specifically address groundwater sampling using dedicated submersible pumps. Collection of the pumping system equipment blank and field duplicate blank and following the field sampling procedures described in the ODEQ Water Monitoring and Assessment Mode of Operations Manual (ODEQ 2009) was used to verify the accuracy of the sampling procedures.

7.9. Spring Water Quality Data Collection Method

7.9.1. Field Water Quality Parameters

Only springs with a minimum flow of ¼ liter per minute were sampled per the approved Work Plans; any flow less than that is considered unsuitable for collecting samples. For those springs that flow continuously, conditions were considered steady state and only one set of field parameters (pH, electrical conductivity, specific conductance, dissolved oxygen) were collected. Spring flow was collected in a 1-liter plastic bottle (or a graduated ¼-cup plastic container for low-flow springs), pre-rinsed with water from that spring. Flow measurements were accomplished without altering the spring or disturbing the area around the spring. The sensors for the pH meter, conductivity meter, and dissolved oxygen meter were rinsed with spring water and placed in the sample container. The same meters were used as for groundwater sampling. Readings were recorded once the measurements had stabilized.

7.9.2. Water Quality Sample Collection

Water quality samples collected from springs were analyzed for the same constituents as for samples collected from monitoring wells (see Table 3).

For non-filtered samples (non-metals), water quality samples were collected directly from each spring by placing sample bottles directly under the spring discharge pipe or other suitable sampling location. Spring conditions were considered steady state and samples were collected immediately following field water quality measurements.

For filtered samples (metals), a water sample was collected from the spring in a clean plastic container. A peristaltic pump (Geotech Geopump with easy-load pump head) and associated disposable silicone tubing was used to transfer the water sample from the container, through a disposable high-capacity field filter with 0.45-µm membrane (Geotech dispos-a-filter with Versapor membrane), and into the appropriate sample bottle obtained from the laboratory. The procedure followed the “in-line peristaltic pump filtration from a container” method described in the ODEQ Water Monitoring and Assessment Mode of Operations Manual (ODEQ 2009). Filtration equipment, including tubing and filter, was only used at a single site and then discarded.

Samples were collected in bottles supplied by the laboratory with the appropriate preservative as required by the testing method. Samples were taken by field personnel wearing nitrile gloves discarded after each use. Following collection, sample bottles

were properly labeled with the spring name, date, time, preservative, and whether or not the sample was field-filtered. The sample bottles were immediately packed in a cooler with ice packs. Samples were mailed to ACZ in Colorado with proper chain-of-custody documentation. Copies of the chain-of-custody are included in Appendix H.

7.10. Spring Water Quality Assurance / Quality Control

Field duplicate samples were collected at a 10% sampling frequency for quality assurance purposes and to measure precision between samples. For the purpose of duplicate sample collection, spring and surface water sites were grouped together since similar collection procedures were used for these sites. A maximum of fourteen (14) spring and surface water sites were sampled during any single quarterly event (2nd Quarter 2013), so one spring or surface water sample field duplicate was collected during each event. Duplicate sample results are presented in Section 10.4.

Equipment blanks were collected from the peristaltic pumping apparatus at a 10% sampling frequency, so one equipment blank was collected during each sampling event. Spring and surface water sample collection sites were grouped together since similar collection procedures were used for these sites. The equipment blank was collected by pumping deionized water from the sample collection container through the tubing and filter and into the sample bottle.

Water quality samples for non-filtered samples were collected directly from each spring, artesian well, and surface water site by placing sample bottles directly under the spring/well discharge pipe or immersing in the surface water body. Therefore, collection of transfer blanks at a 10% sampling frequency is appropriate, so one transfer blank was collected at a randomly selected spring or surface water site during each event. The transfer blank was collected by pouring a sample of deionized water from its original transport container directly to sample bottles. Results are presented in Section 10.4.

ACZ prepared a Level 2 analytical report for each sampling event describing internal QA/QC procedures and results. The Level 2 analytical reports for each quarterly event are included in Appendix H.

At least two mercury transfer blanks were collected in the field during each sampling event and submitted to the laboratory for mercury analysis.

8. WELL AND PIEZOMETER GROUNDWATER LEVEL MONITORING

8.1. Background

Baseline water level data collected from the monitoring well network are used in the following data analysis and interpretation. This section provides interpretation to address TRT request for information (Lynch 2014), including:

- Time series plots including hydrographs
- Nearby pumping effects based on responses recorded on hydrographs for wells GW-1 and GW-4
- Naturally occurring variables and trends

8.2. Well Hydrographs

Well hydrographs for hand measurements in shallow wells, transducer measurements in shallow wells, and deep VWPs are provided on Figures D1, D2 and D3 in Appendix D, respectively. The hydrographs on Figures D1, D2, and D3 in Appendix D have consistent horizontal and vertical scales to allow comparison of trends between wells. Note that the elevation intervals for Figures D1, D2, and D3 vary.

Individual well hydrographs for shallow and deep wells are provided below in Section 8.2 (in the subsection for each well). Vertical scales on these individual hydrographs vary, which may exaggerate trends for the purpose of discussion.

8.2.1. Shallow Wells

Groundwater level monitoring has focused predominantly on shallow (typically above 500 feet depth) wells, where the majority of wells are completed. A significant proportion of the proposed mining activities within the proposed Grassy Mountain Mine will also take place between the surface and 500 feet depth.

Approximately half of the shallow groundwater levels measured quarterly have remained relatively stable (i.e., typically within +/- one foot) during the monitoring period between 2013 and 2018 (Figure D1 in Appendix D). Of these wells, GW-5, GW-4, PW-4, 57-10, GW-2, and BLM remained stable with relatively flat or slightly upward trending water levels from 2013 through 2018 and minor fluctuations attributed to seasonal recharge. Wells 59770, 59763, 59764, GW-6, and 89-2 had a slight downward trend with minor recharge fluctuations.

Wells without stable trends are described below in sections 8.2.1.1. through 8.2.1.9. These wells exhibit fluctuations that appear to be responses to recharge from high-precipitation years, from pumping, or from drilling activities.

8.2.1.1. Well 59768

In 2015 and 2017, groundwater levels in well 59768 increased by approximately 2 feet and 7 feet respectively for brief periods during the First and Second Quarters of those

years. Levels declined to approximately previously measured elevations during the Third and Fourth Quarters (Figure 6). Based on the driller's well completion log, well 59768 was advanced to 25 feet and screened from 10 feet to 25 feet.

Weather data from a weather station near Kelsey Butte (Meso West, 2019) located approximately 35 miles northwest of the site shows the annual precipitation data for the from 2001 to 2018 (Figure 7). Water year 2017 had the highest amount of precipitation during the water level monitoring period, with 2015 being the second highest.

A lithologic description is not indicated on the well log. It appears the high-water years have a direct impact on the measured water elevation in this well, which could be due to its shallow completion. This well is located approximately one mile north of the proposed Grassy Mountain Mine.

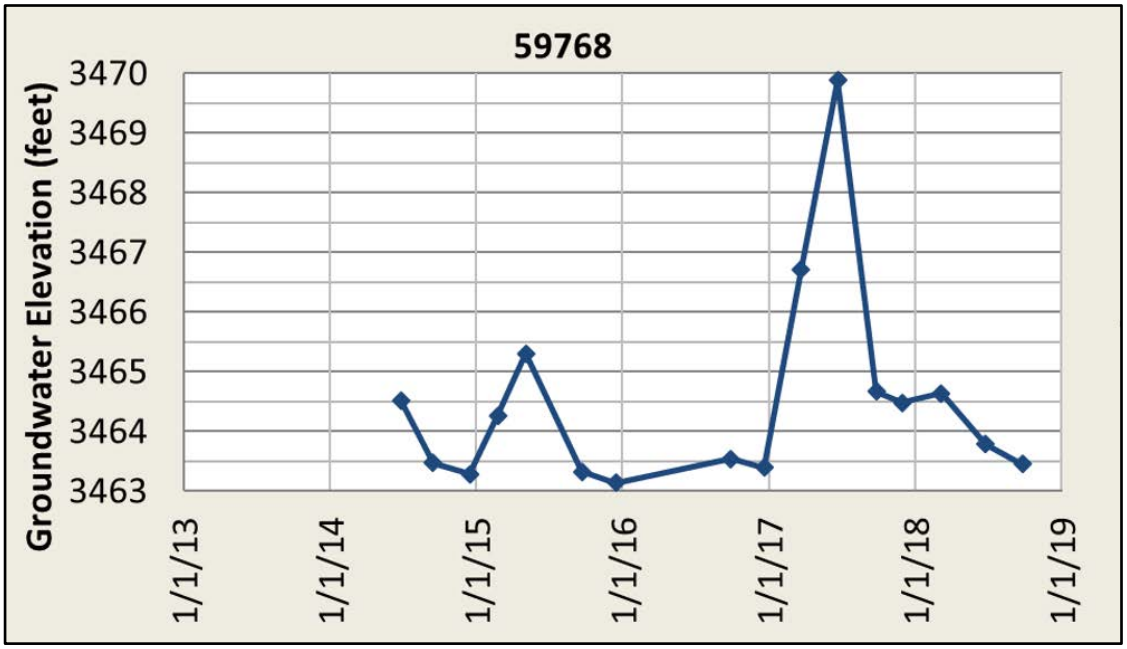

Figure 6. Groundwater hydrograph for well 59768

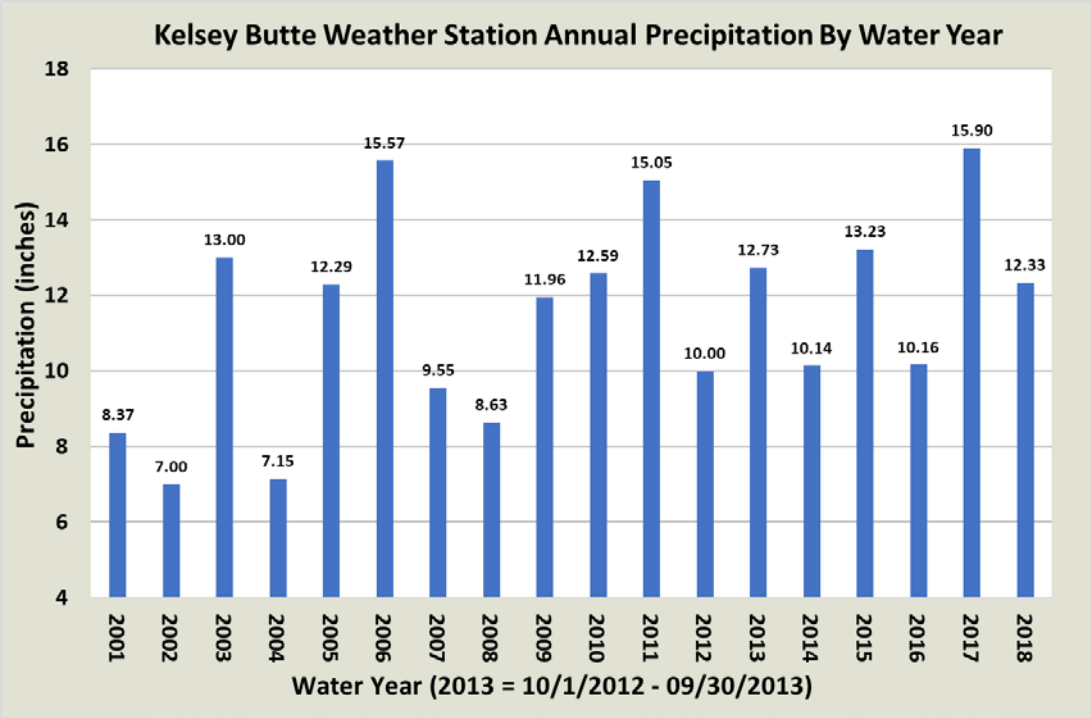

Figure 7. Kelsey Butte weather station annual precipitation by water year

8.2.1.2. Well 57-1

Groundwater levels in well 57-1 increased by approximately 18 feet between December 2015 and June 2017. It is significant to note that no water level monitoring was completed in this well between December 2015 and August 2016 sampling events. Groundwater levels decreased by approximately 3 feet between the Third and Fourth Quarter 2017 sampling events (Figure 8). The reason for the change is not entirely apparent; however, the large increase took place at the same time as the high precipitation period in 2017. According to records, this well was originally drilled to 765 feet, but screens were installed from 108 to 138 feet below ground surface. Well 57-1 is located approximately 1,300 feet from the western edge of the proposed Grassy Mountain Mine. The completion lithology was not indicated on the well log (Appendix C2).

After the 2nd Quarter 2018 measurement was collected, a slug test was performed on the well, as described in the 2nd Quarter 2018 water resources baseline data summary memo (SPF 2018d). The purpose of the slug test was to evaluate the integrity of the well and confirm that there was hydraulic connection to a water-bearing zone. The slug test involved pouring 1 gallon of de-ionized water into the well. That volume of water should have raised the water level in the well by over 12 feet. Instead, the water level dropped over 8 feet within 2 minutes and continued to decline by a total of 15 feet after 30 minutes. The water level was measured at a depth of 71.38 feet, about 14 feet lower

than the pre-test static water level, over 2 hours after the test began. The 3rd Quarter measurement was similar to that measurement (0.16 feet lower). The average static water level was at a depth of about 68 feet between September 15, 2014 and December 16, 2015, when water levels in the well were stable. Therefore, the 3rd Quarter water level measurement was about 3 feet lower than the "normal" static water level.

The higher than normal water level measurement observed between December 21, 2016 and June 22, 2017 is theorized to have been due to a blockage in the well that the slug test dislodged. The blockage might also have been related to a possible casing break, which would have allowed water level probes to pass out of the casing and into the annular space outside of the casing during the 2017 and early 2018 measurement events.

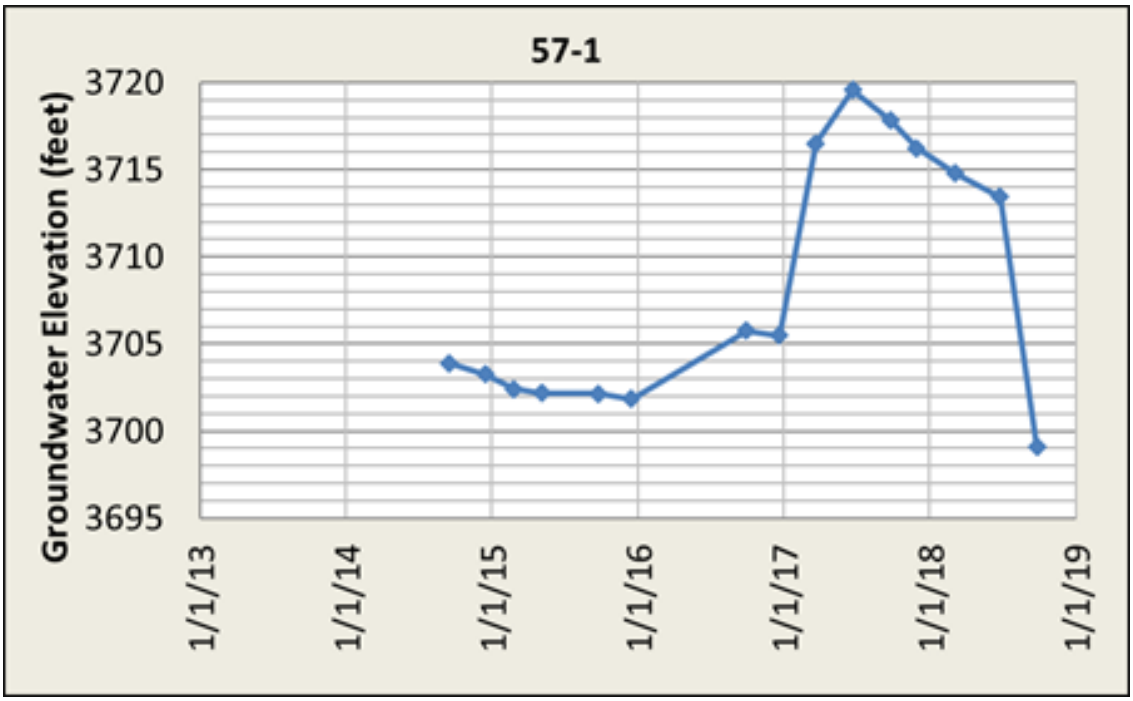

Figure 8. Groundwater hydrograph for well 57-1

8.2.1.3. Wells GW-1 and PW-1

Wells GW-1 and PW-1 seem to have a flat or slightly rising water level trend, which only varied during the pumping of PW-1 to support resource and reserve drilling activities (i.e., well construction water supply). PW-1 was used for drill water at various times between September 29, 2016, and March 22, 2017. The pumping rate and duration are not known, but the well is believed to be equipped with a pump capable of producing 20 to 30 gpm. The December 2016 monitoring event found that groundwater levels in wells GW-1 and PW-1 had declined by approximately 4 feet and 7 feet, respectively, from previous measurements. Water levels eventually rebounded to previous trends during subsequent levels (Figure 9). The decline and rebound

effects are attributed to intermittent pumping in PW-1. The clear hydraulic response in well GW-1, screened in gravel deposits from approximately 135 feet to 155 feet bgs, suggest a hydraulic connection exists based on pumping in nearby well PW-1. PW-1 was reportedly screened within a deeper portion of the aquifer, from 320 feet to 340 feet in unconsolidated clay and sand deposits and from 400 feet to 420 feet in sandstone. Wells GW-1 and PW-1 are approximately 100 feet apart.

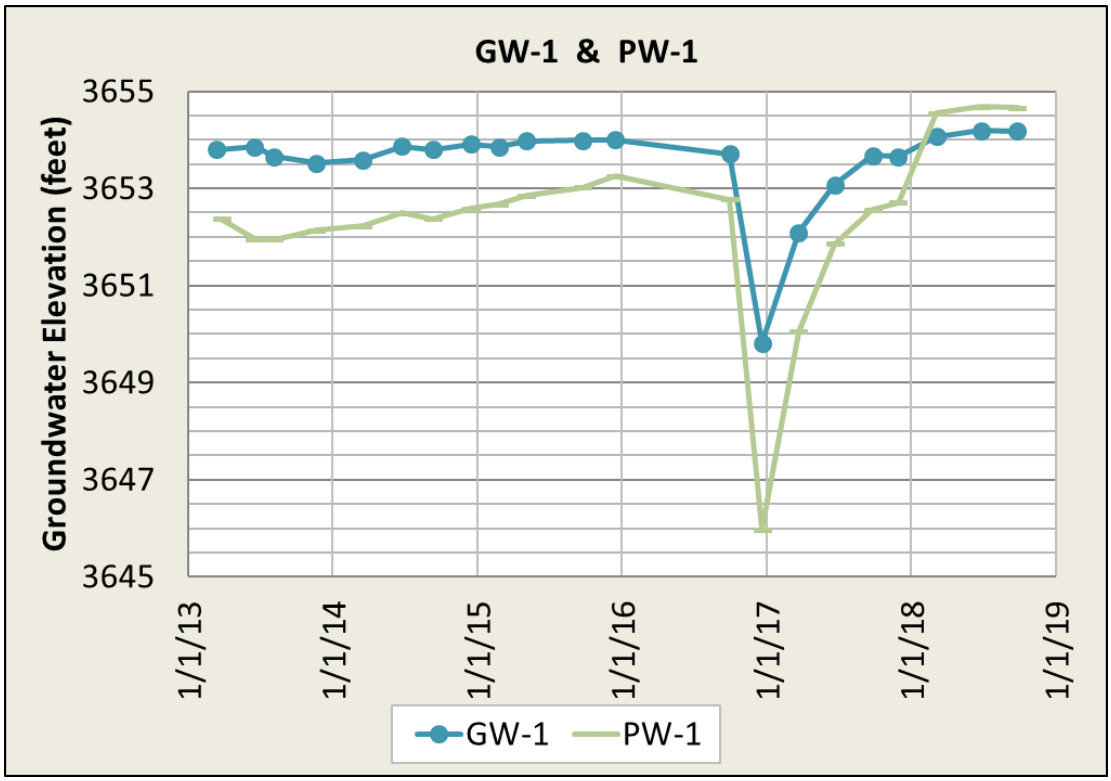

Figure 9. Groundwater hydrograph for wells GW-1 and PW-1

8.2.1.4. Well 26-092-915

Well 26-092-915 had a steady decline of approximately 0.75-foot per year from the start of monitoring in the first quarter of 2013 until the first measurement in 2017 when water levels increased 3 feet to approximately 0.4 feet above the initial measured water level in 2013 (Figure 10). The observed decline is likely due to below average precipitation between 2013 and 2017, with above average precipitation during the winter of 2017. This well is screened from 228 to 268 feet below ground surface in a borehole that was drilled to 915 feet. The lithology encountered is not reported, and information on the well seal is not known. This piezometer may be particularly sensitive to precipitation as a result of a shallow surface seal or lithology.

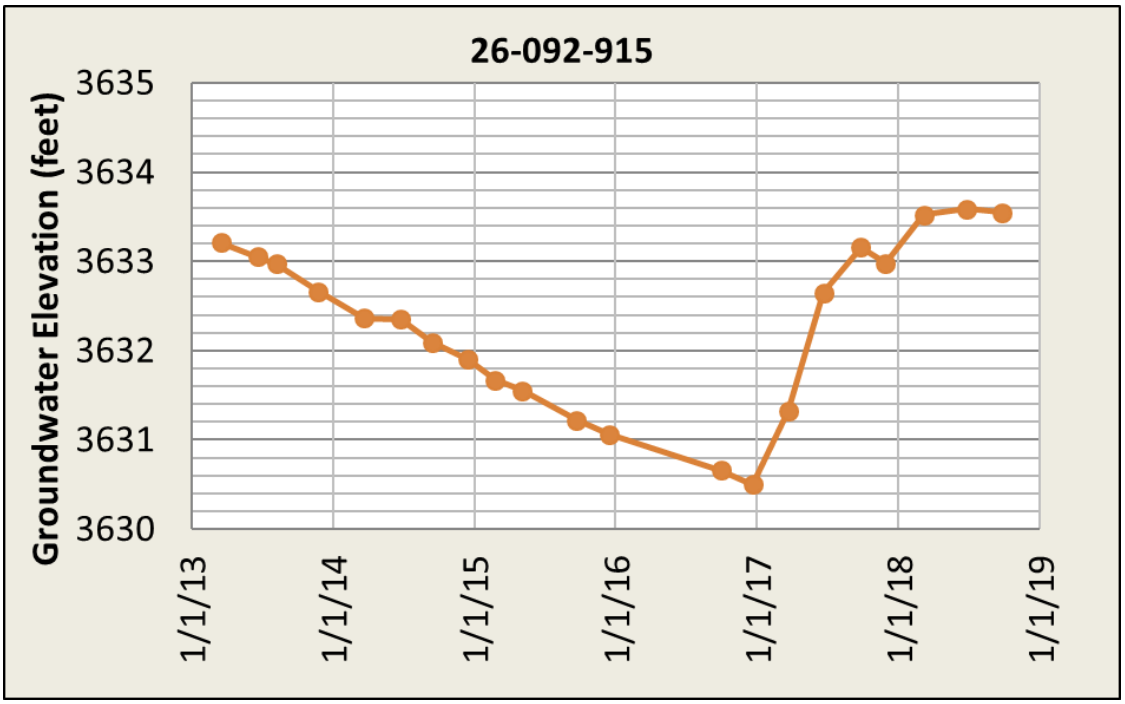

Figure 10. Groundwater Hydrograph for well 26-092-915

8.2.1.5. Wells 59760, 59761, and 59772

Wells 59760, 59761, and 59772 are completed in close proximity (220 feet) of each other and all show identical water level trends. The three wells are completed in fractured basalt approximately 1,000 feet southeast of the proposed Grassy Mountain Mine. Water levels (Figure 11) show steady declines of 0.5 foot per year interspersed by two recovery periods during the years 2014 (~1-foot recovery) and 2017 (~2-foot recovery). The recovery periods appear to be associated with winter precipitation. These wells are in close proximity to Schweizer Reservoir, a seasonal impoundment, which likely functions as a local source of recharge.

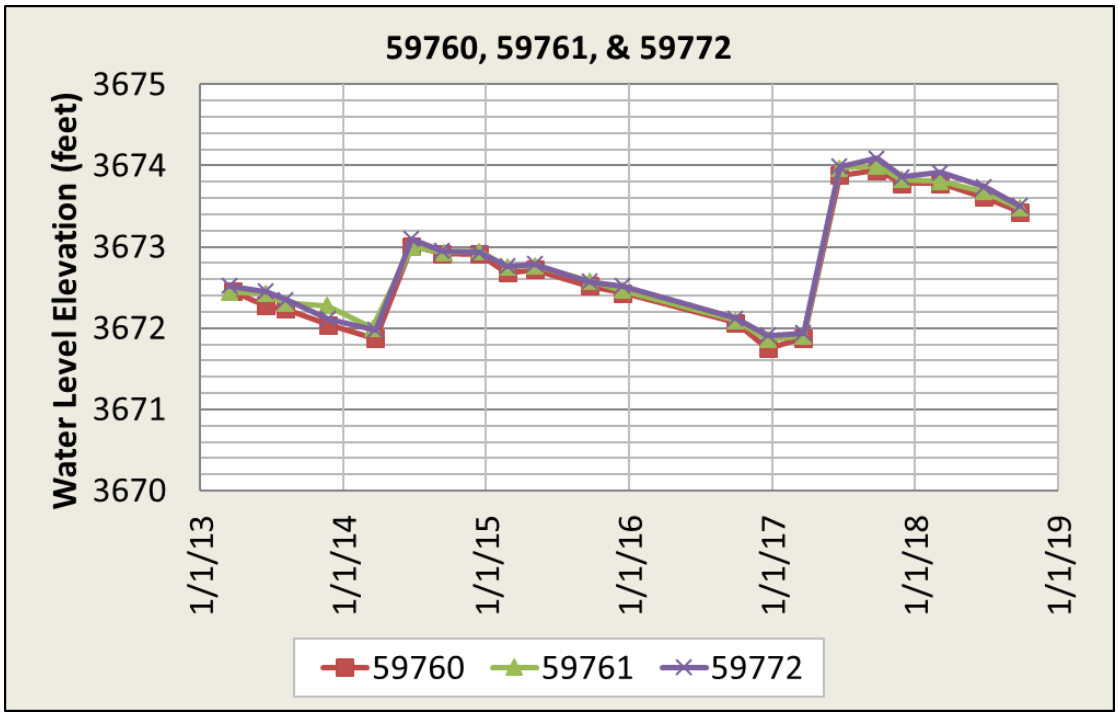

Figure 11. Groundwater Hydrograph for wells 59760, 59761, & 59772

8.2.1.6. Wells GW-3 and GMW17-33

Well GW-3 had a stable to very slowly rising water level from the start of monitoring in 2013 until the third quarter of 2017 (Figure 12). Between the hand measurements on 09/26/2017 and 11/29/2017, the water level began declining, with approximately 5 feet of decline in one year. The start of this 5-foot decline coincided with the drilling of GMW17-33, during which the driller noted first hitting water on 11/17/2017. On 11/29/2017 a transducer was installed in GW-3 for monitoring the water level during pumping tests of the 59762, GMW17-32, and GMW17-33. Between 11/29/2017 and 12/28/2017 (transducer removal) the transducer recorded a drawdown of only 0.39 feet, with no drawdown or recovery trends apparent from any of the aquifer tests. With no significant drawdown in GW-3 apparent from the testing of GMW17-33 (average flow rate of 25.8 gpm for 97 hours between 12/14/2017 and 12/18/2017) prior to the transducer being pulled on 12/28/2017, it is theorized that the initial drop in water level first detected on 11/29/2017 may have been caused by delayed effects from the drilling of GMW17-32.

In GMW17-32, water was first encountered on 8/25/2018. Up through the most recent quarterly monitoring (3rd quarter 2018), both GW-3 and GMW17-33 show an average decline of approximately 1.25 feet per quarter and 2.5 feet per quarter, respectively, with both wells drawing down approximately 2.5 feet in the last quarter alone (Figure 13).

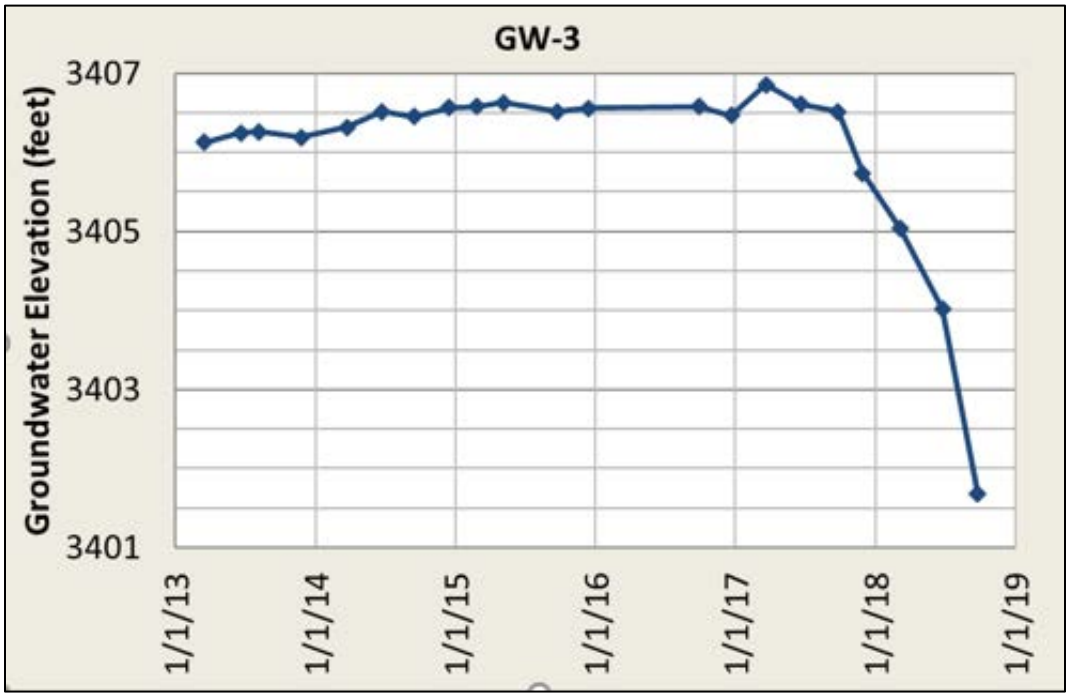

Figure 12. Groundwater hydrograph for well GW-3

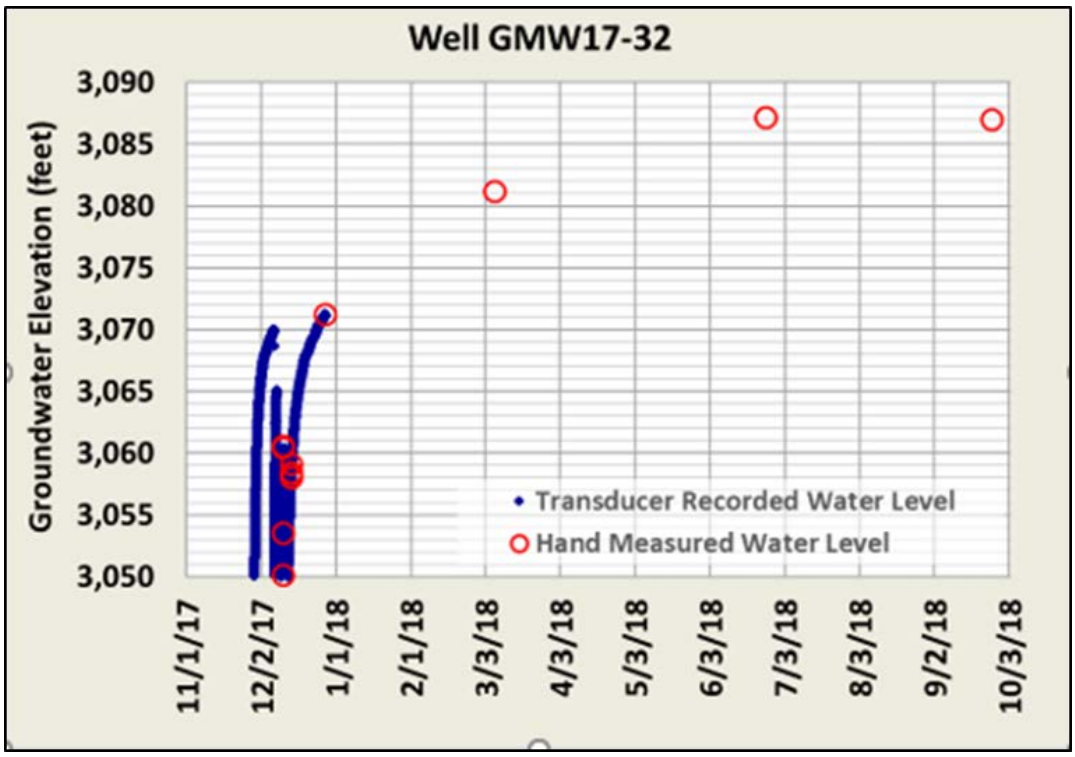

Figure 13. Groundwater Hydrograph for well GMW17-33

The slow continuous decline of these water levels, months after water being produced from the aquifer by test pumping, might indicate a compartmentalized aquifer with areas of low hydraulic conductivity that was influenced by test pumping. More likely, the continuous decline may suggest drainage from shallower compartment to a deeper compartment through a borehole or well, either GMW17-32 or another borehole drilled in the vicinity.

8.2.1.7. Bishop Well

The Bishop Well shows a slightly decreasing water level trend (Figure 14) with drawdown effects from the well being used intermittently for livestock watering.

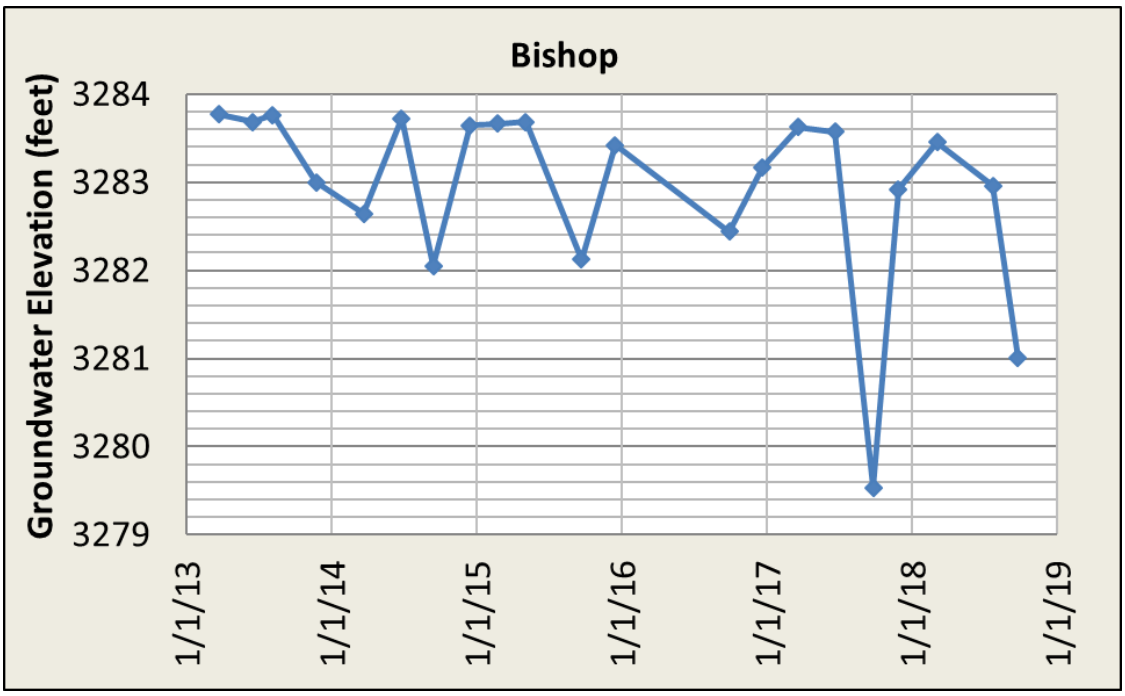

Figure 14. Groundwater Hydrograph for the Bishop Well

8.2.1.8. Well 59766

Since the initial monitoring in 2013, water levels in Well 59766 have declined approximately 3 feet (Figure 15). The trend of the decline looks similar to a drawdown curve except for a minor (0.34 foot) rise measured in March of 2017 (likely due to the high-water year). This well was drilled to 76.5 feet through multiple sand and clay layers, and screened from 25 to 45 feet. The monitoring well report indicates that the borehole was filled in with pellets and sand from 47 to 76.5 feet. It is possible that a higher aquifer zone is draining into a deeper portion of the aquifer, either within the screen section or from the screen section into the lower borehole.

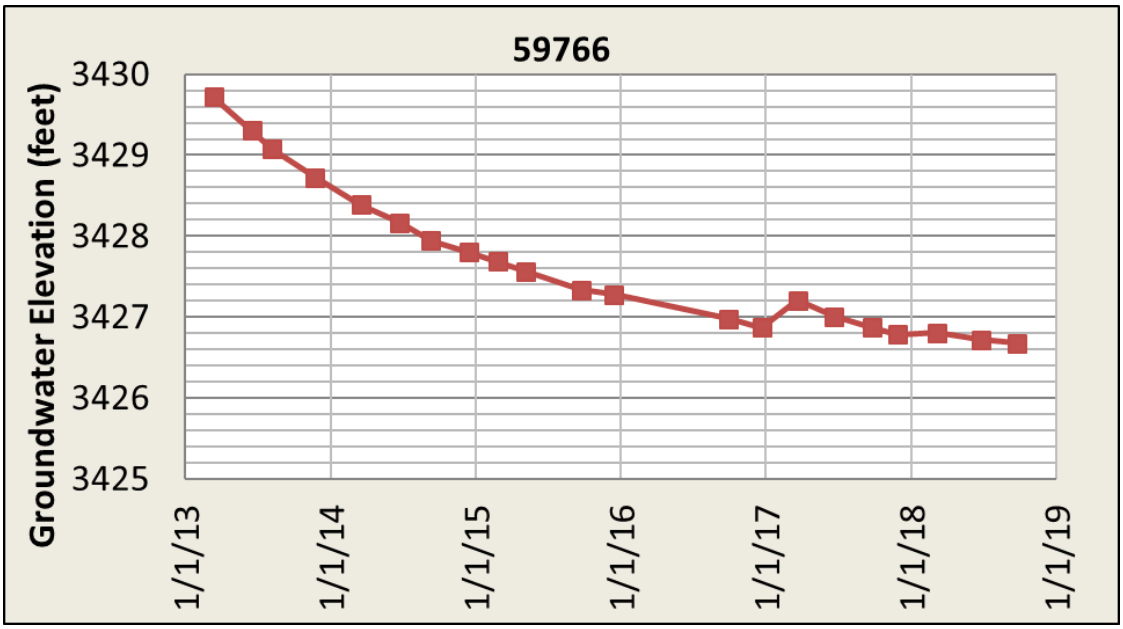

Figure 15. Groundwater Hydrograph for Well 59766

8.2.1.9. Continuous Water Level Data

Continuous water level data from wells GW-1, GW-2, and GW-4 are presented in Figure 16 for GW-1, Figure 17 for GW-2, and Figure 18 for GW-4. This data was obtained from pressure transducers installed during the 1st Quarter of 2013, corrected for barometric pressure effects. Early hand-measured water levels in GW-1 and GW-4 that are noticeably lower than the transducer data in 2013, are influenced by recently pumped nearby monitoring wells for sampling.

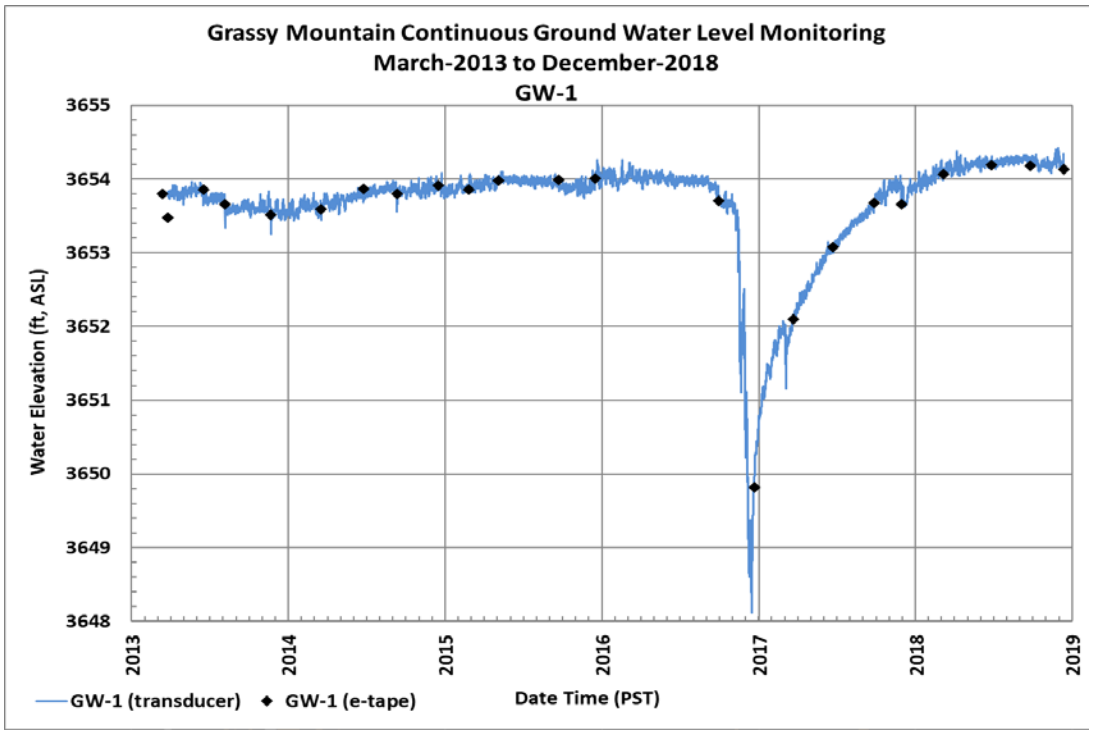

Figure 16. GW-1 Continuous Water Level Monitoring Plot

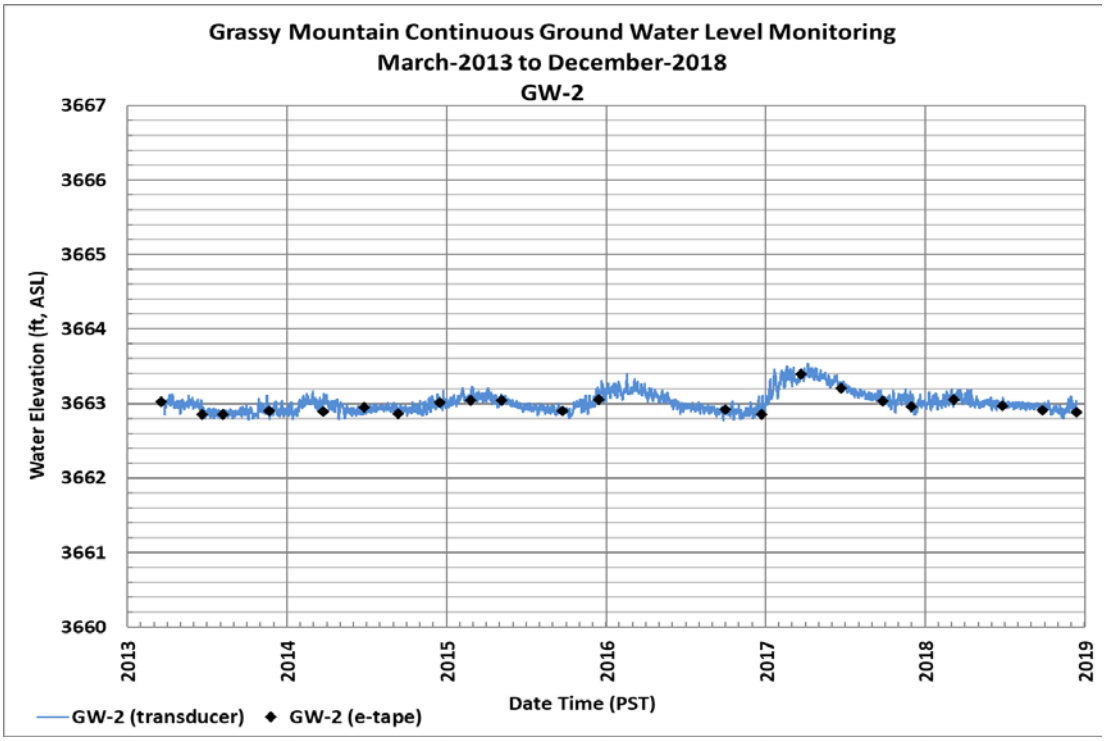

Figure 17. GW-2 Continuous Water Level Monitoring Plot

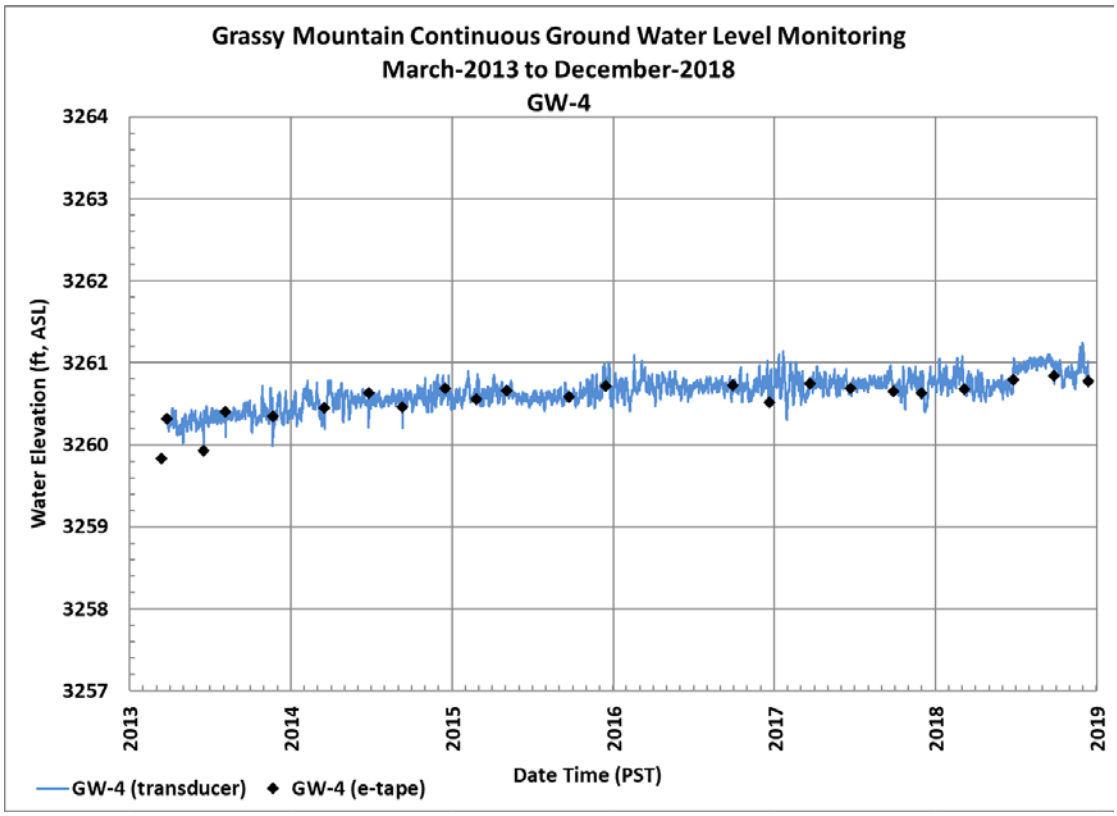

Figure 18. GW-4 Continuous Water Level Monitoring Plot

8.2.2. Deep Wells

Wells greater than 500 feet are considered deep. Deep water levels have been monitored in Well 59762 since 2013. More recently, water levels in Well GMW17-32 were monitored in 2018. Groundwater levels were also monitored using VWP sensors installed within the deposit at depths greater than 500 feet.

8.2.2.1. Well 59762

Groundwater levels in monitoring well 59762 have shown a gradual decline of approximately 1 foot in four years from 2013 to 2017 and a slow recovery from the 2018 test pumping which added an additional foot decline(Figure 19). It is possible that the observed decline is a result of slow leakage from the well screened interval downward due to vertical gradient. Another possible explanation is evaporation from the well exceeding infiltration.

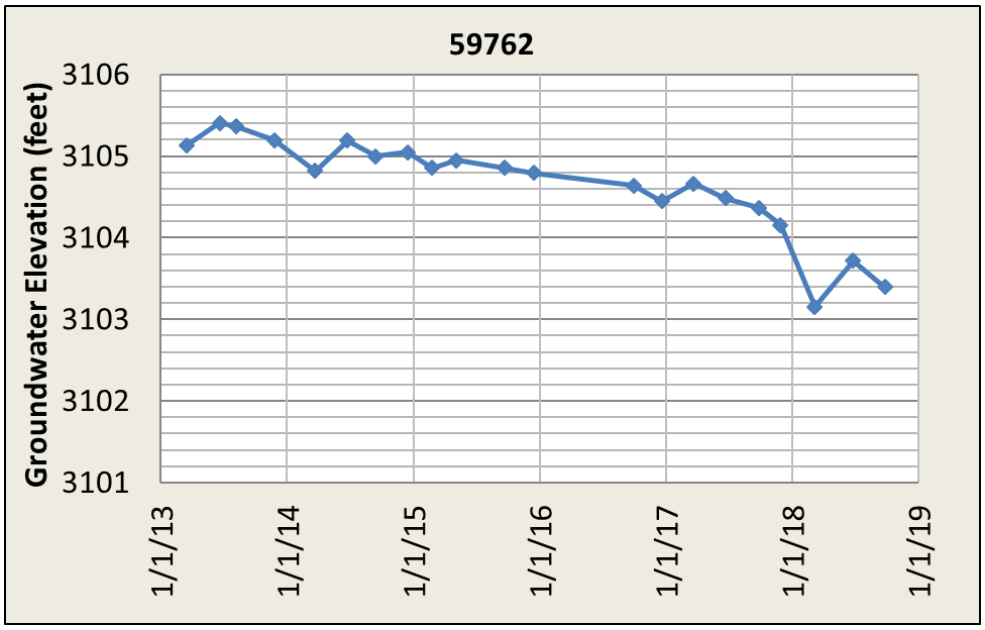

Figure 19. Groundwater hydrograph for Well 59762

8.2.2.2. Well GMW17-32

The 2018 groundwater levels in monitoring well GMW17-32 (Figure 20) appear to show a recovery response to drilling and test pumping that occurred in late 2017.

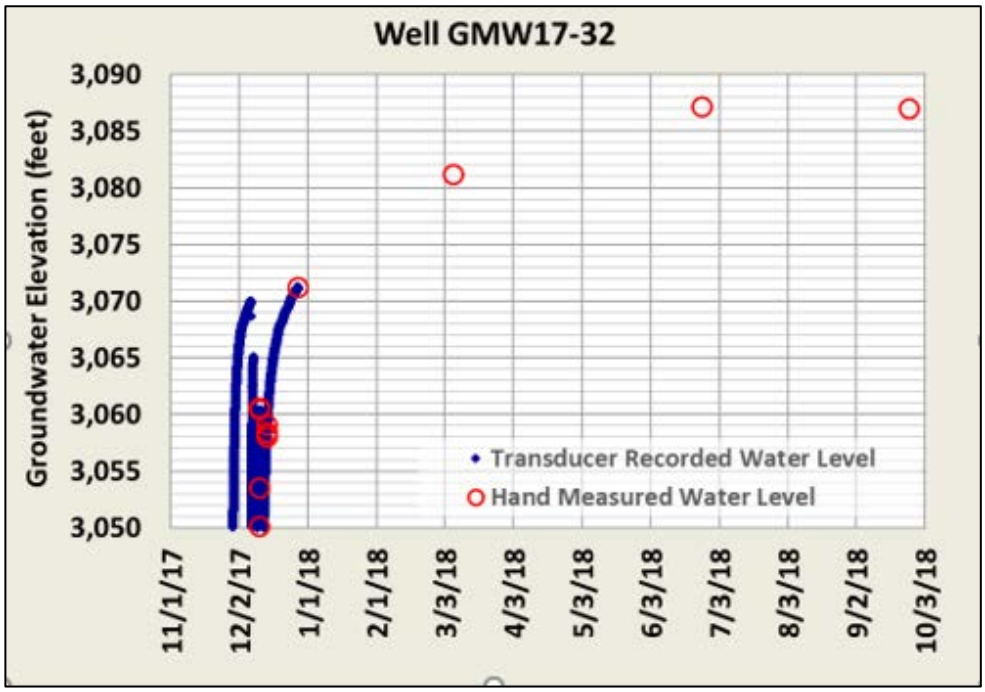

Figure 20. Groundwater Hydrograph for Well GMW17-32

8.2.2.3. Vibrating Wire Piezometers

A total of 15 VWP sensors were installed in five boreholes during the 2017 mineral resource and reserve program (three sensors per borehole) (Table C3 in Appendix C). Sensors were installed predominantly on the eastern side of the proposed Grassy Mountain Mine at shallow, intermediate, and deep intervals, intended to bracket the reserve ore body (SPF, 2017b). VWP installation was done in accordance with approved standard operating procedures (SPF, 2017a). Installation forms for the VWPs are also included in Appendix C.

Interpretation of the VWP pressure responses (supported by observations of the presence or absence of water during borehole advancement) indicates groundwater occurrence is discontinuous horizontally and vertically within the deposit area. Groundwater is interpreted to be present where positive pressure responses recorded by VWPs are within the sensor accuracy range, greater than approximately 0.4 pounds per square inch (psi).

Groundwater is encountered at elevations above, within, and below the deposit area at three of the five borehole locations at various depths: GM17-16-I, GM17-16-D, GM17-20-I, GM17-20-D, GM17-21-I, and GM17-30-I (Table C3 in Appendix C). VWP locations are shown on Figure 21. A summary of interpreted VWP water level elevations are shown Figure 22.

Individual hydrographs for the six VWPs that encountered groundwater are provided in Figure D3 in Appendix D. The hydrographs from GM17-20-I, GM17-20-D, GM17-30-I show single event data gaps where data was not able to be downloaded during one quarterly event. The data gaps are due to a malfunction in the datalogging equipment. The problem has been fixed and there have not been any more issues with data download since June 2018. The data gaps are not considered problematic for water level data interpretation as the data before and after the gap are consistent.

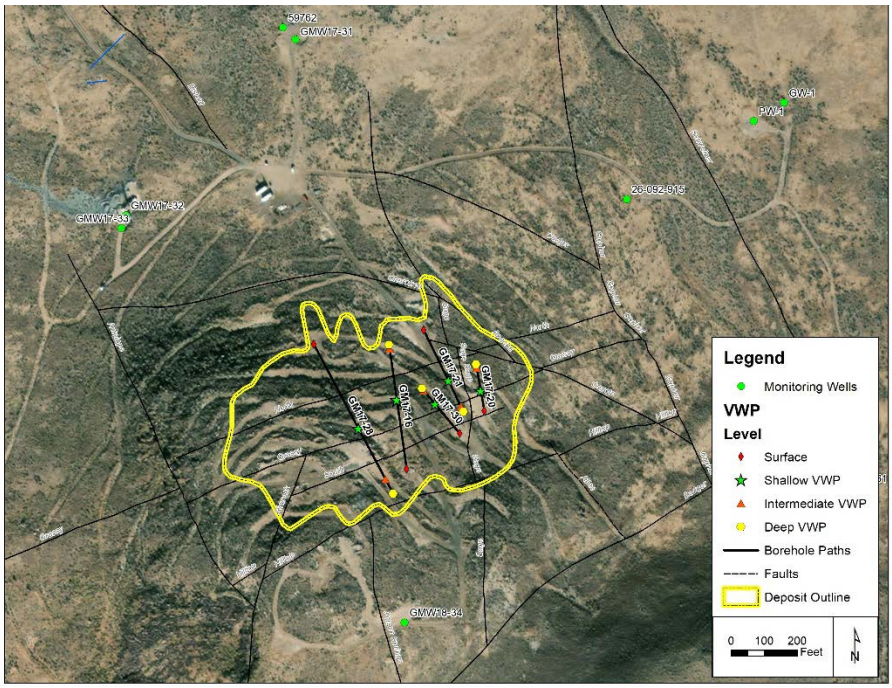

Figure 21. Borehole and VWP sensors location map

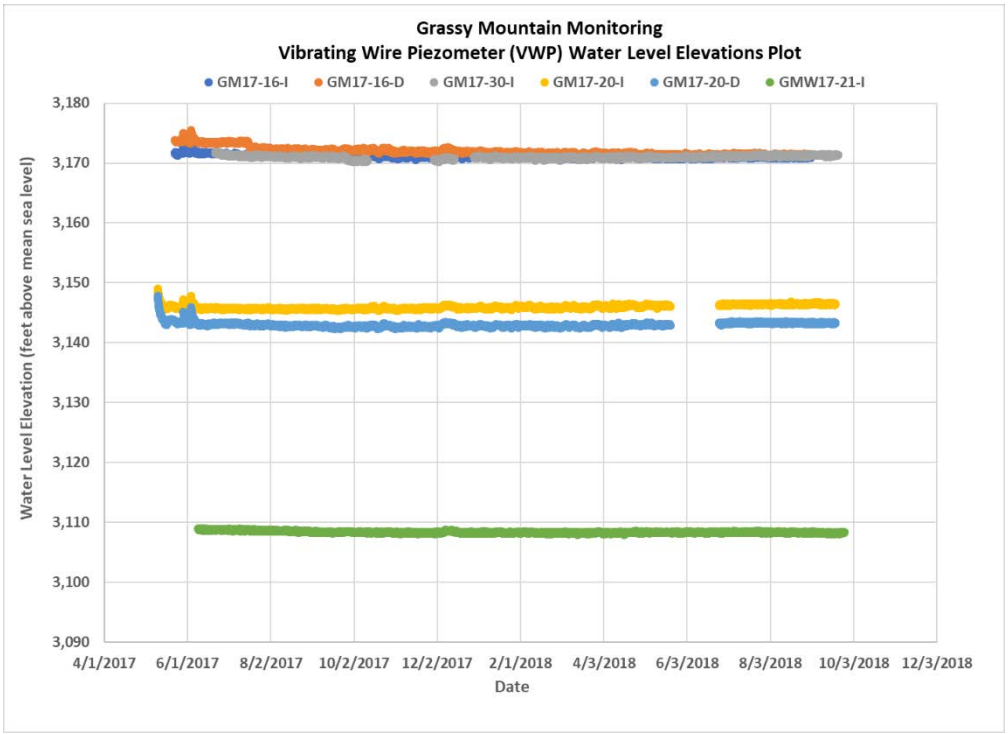

Figure 22. VWP sensor hydrographs (estimated elevations)

8.3. Groundwater Contour Maps

Groundwater elevation (potentiometric) contour maps for the shallower completed monitoring wells were created using the mean water level data from each year (2013 – 2017) and for each quarter in 2017 (Appendix E). The potentiometric surface maps were created in the two-dimensional mapping software utility Surfer® (Version 8). The groundwater flow direction is towards the northwest with no major changes in the contour lines except for 2013 where GW-5, 59768, 57-10, and 57-1 were not included (not monitored till 2nd Quarter 2014).

9. SPRING AND ARTESIAN WELL FLOW

The spring and artesian well flow data collected as part of this baseline report is used in the following data analysis and interpretation. This section provides interpretation to address TRT request for information (Lynch 2014c), including:

- Time series plots
- Naturally occurring variables and trends

9.1. Springs

Monitoring of spring flows has been conducted at Grassy Mountain to fulfill baseline characterization efforts. Spring monitoring has included two separate location sets: 'baseline' consisting of eleven (11) individual spring sites, and 'background' consisting of sixteen (16) individual spring sites (refer to Table B2 in Appendix B). Based on field observations during monitoring, most of the springs appear to be used for stock watering purposes.

Flow rates measured between 2013 and 2018 are summarized for springs grouped by flow rates that are consistently less than 1 gpm (Figure 23), flow rates that are consistently greater than 1 gpm (Figure 24), and flow rates that fluctuate between less than and greater 1 gpm (Figure 25). A table of all monitored spring flows is presented as Table F6 in Appendix F.

Overall, flow rates have remained relatively stable over the monitored period, with the following noted exceptions:

- Seasonal influences are apparent at the Deposit Stock Tank location (Figure 20) with higher measured flows during winter months (i.e., on the order of approximately 0.4 gpm to 0.6 gpm) and lower flows during summer months (i.e., 0.1 to 0.2 gpm range).

- The flow rate at Lowe Spring was observed to increase to approximately 0.4 gpm following the April 2015 monitoring event (Figure 20).

- Flows at locations including Twin Springs South and Tank East of Negro Rock showed variable rates over time (Figure 21).

The combined flow rates for all of the monitored locations is on the order of roughly 35 gpm to 45 gpm, accounting for temporal variability in the estimated flow rates.

9.2. Artesian Wells

Flow has been measured from three (3) artesian wells as part of the groundwater baseline monitoring program. As with springs, these wells were monitored as baseline (Prod-1) and background (Darky Rock Well and Flowing Well); refer to Table B2 in Appendix B. The flow measured from these artesian wells are summarized in Table F6 in Appendix F.

9.2.1.1. Prod-1

Prod-1 is a flowing artesian well screened in three water-bearing intervals (145 feet to 255 feet, 325 feet to 355 feet, and 380 feet to 420 feet). The lithology within the two uppermost intervals is characterized on the driller's report as sandstone with blue clay, and the lower interval is described as fractured sandstone. This well has been observed to be flowing during monitoring events (up to approximately 1.5 gpm), with the exception of events between December 2016 and September 2017 (Figure 25). During the December 2016 monitoring event the discharge pipe was believed to be frozen. Between March 2017 and September 2017, the well was pumped periodically for water supply for the resource and reserve drilling program, causing the water level in the well to drop below the artesian discharge pipe. The well was flowing again at approximately 0.34 gpm during the November 2017 monitoring event.

9.2.1.2. Background Artesian Wells

The flow measured from Darky Rock Well was normally between approximately 10.5 and 11.5 gpm, with the flow dropping to 8.3 gpm during the 2nd Quarter of 2014. Construction details for this well are not known.

The flow measured from Flowing Well ranged between approximately 3 gpm and 5.5 gpm, with higher flows observed between the 2nd Quarter of 2014 and the 2nd Quarter of 2015. Construction details for this well are not known.

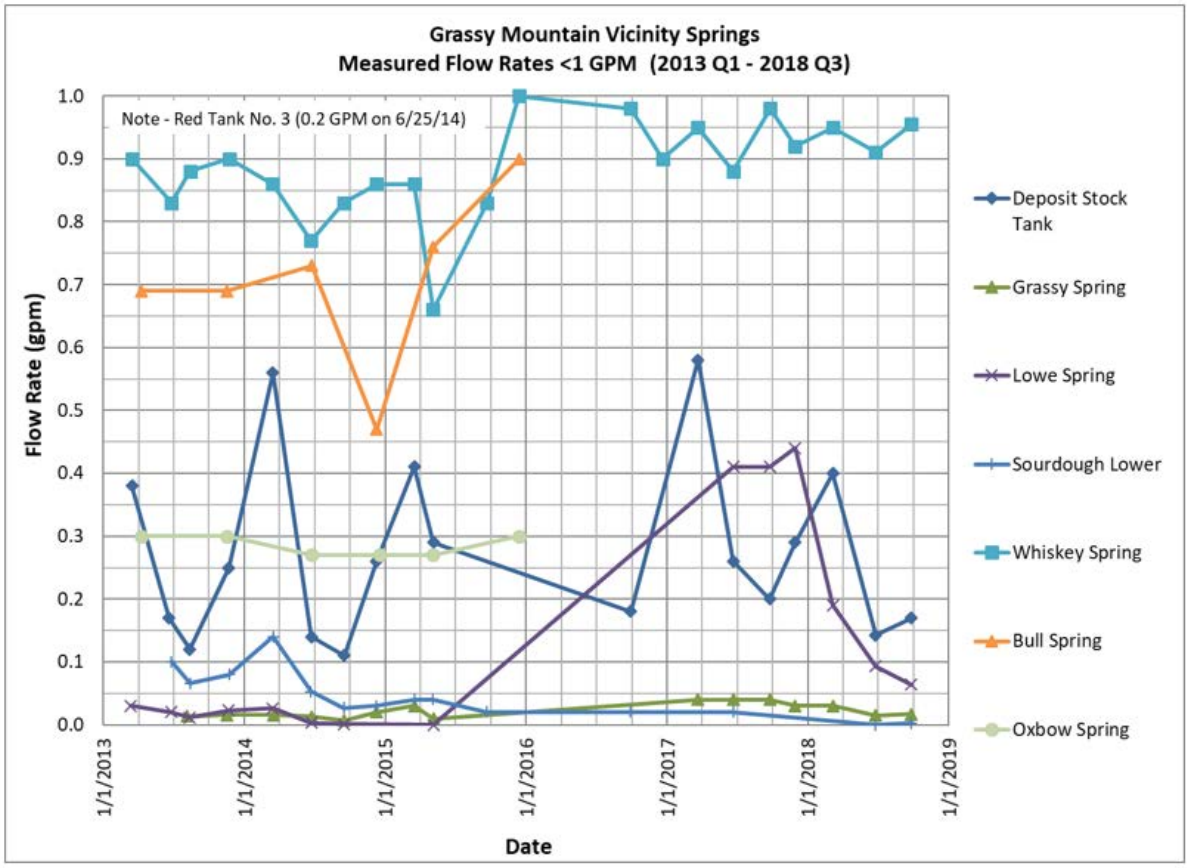

Figure 23. Grassy Mountain vicinity springs with measured flow rates less than 1 gpm (2013-2018)

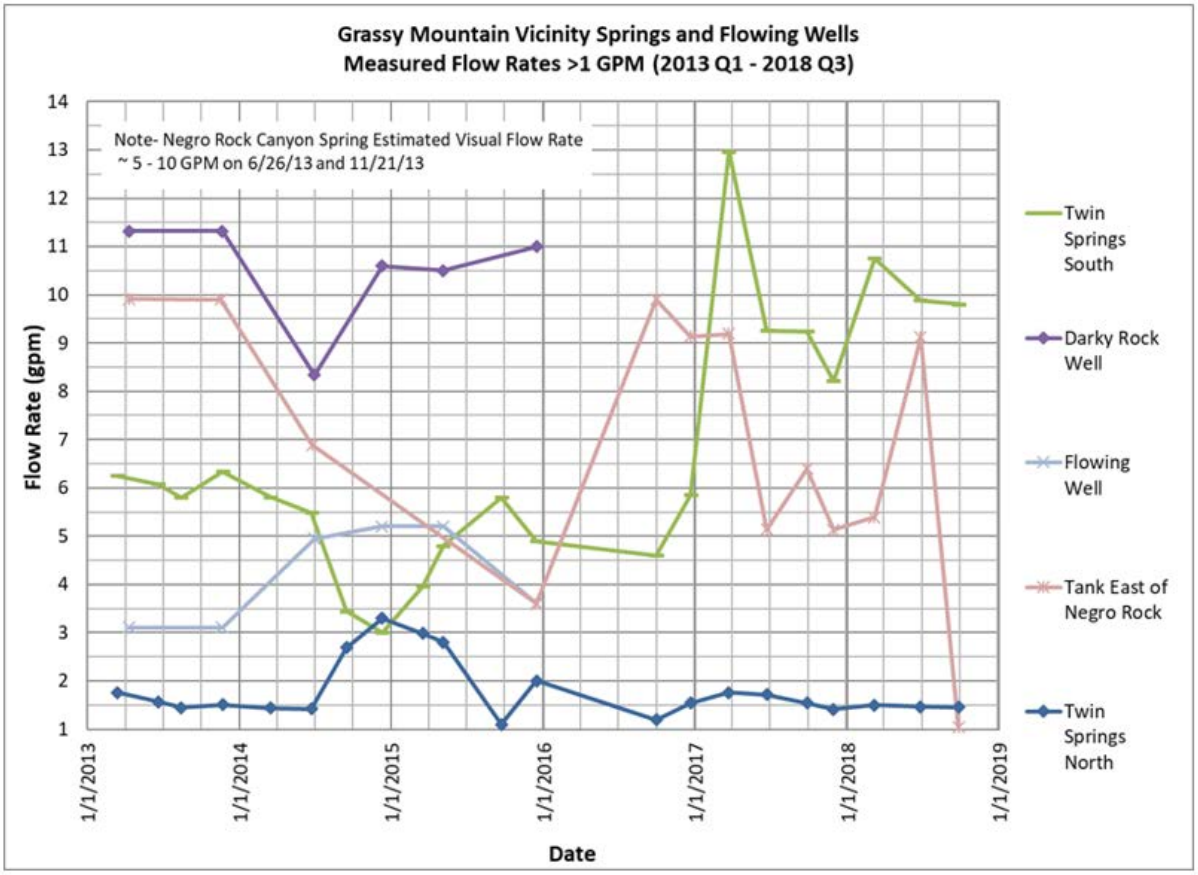

Figure 24. Grassy Mountain vicinity springs and flowing well measured flow rates greater than 1 gpm (2013 – 2018)

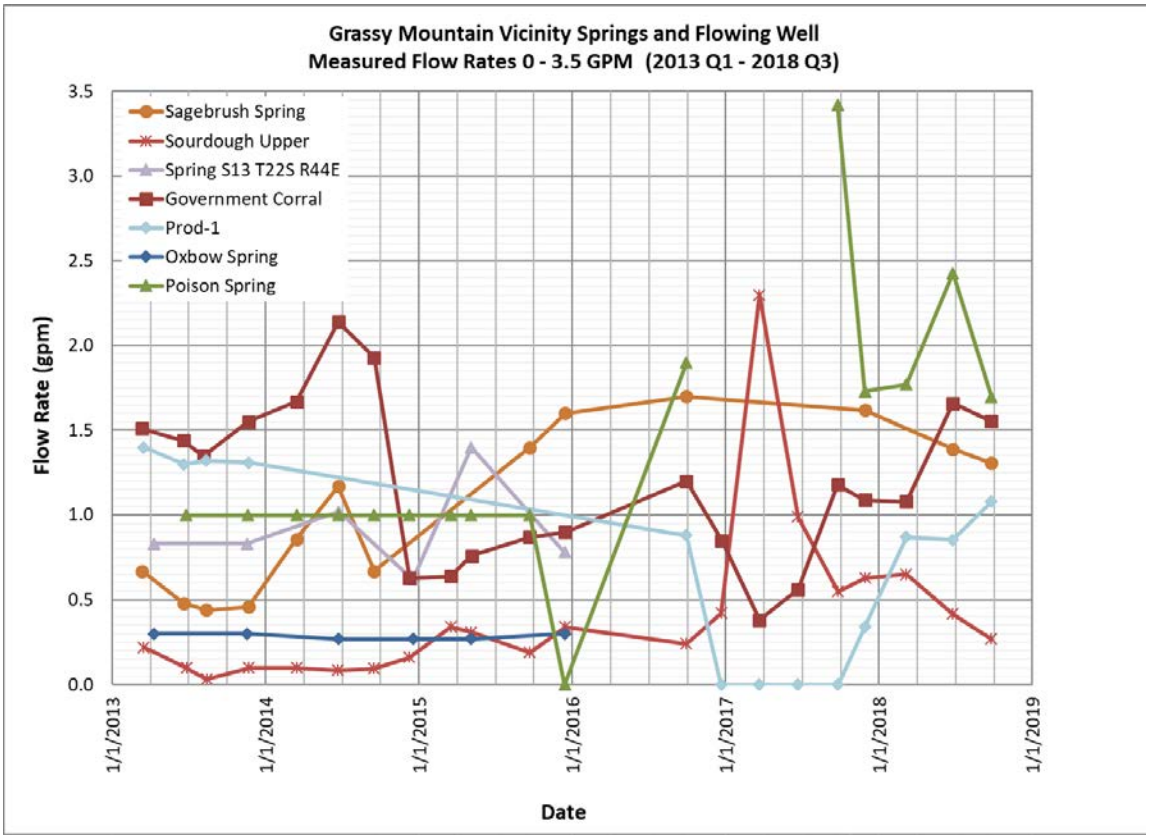

Figure 25. Grassy Mountain vicinity springs and flowing well measured flow rates, 0 - 3.5 gpm (2013 – 2018)

10. GROUNDWATER QUALITY

This section summarizes water quality results for springs (Section 10.2) and wells (Section 10.3).

10.1. Background

The objective of water quality sampling activities was to provide a baseline characterization of spring and well water quality at the Grassy Mountain Project mine site and adjacent Bishop property (EM Strategies, 2017). The Bishop property is no longer part of the Permit Area, but the data has been collected, so it is presented here. Water quality sampling was performed in accordance with the approved baseline study workplan (Section 3.4 for groundwater in EM Strategies, 2017) to fulfill baseline characterization efforts. The Work Plan addressed the regulatory framework,

methodologies, and locations, and summarized previous investigations related to water quality sampling and monitoring efforts performed during late 1980s and early 1990s.

Well and spring water quality results are compared to both primary drinking water standards and secondary drinking water standards. The primary drinking water standards are legally enforceable standards due to potential human health concerns and are expressed as maximum contaminant levels (MCLs). The MCL is the highest level of an analyte allowed in drinking water. Secondary drinking water standards are non-enforceable recommended standards established to limit cosmetic or aesthetic effects (not health-related) in drinking water, expressed as secondary maximum contaminant levels (SMCLs). Spring water quality data is also compared to ODEQ water quality standards as described in OAR 340-041.

A summary table of all the analytical results for wells and springs is provided as Table F1 in Appendix F. Laboratory analytical reports for all sampling events are provided as Appendix H. ACZ performed the analyses for all laboratory constituents sampled for the Grassy Mountain project.

Geochemical characteristics of the groundwater (wells and springs) were evaluated using Piper diagrams (also known as trilinear diagrams) and Stiff diagrams, with major ions expressed as meq/L. These diagrams are useful for evaluating the geochemical signature of the water, to illustrate general differences in water chemistry using major ions, and to group waters with similar chemical signature into identifiable groups (or hydrochemical facies).

10.2. Springs

10.2.1. Drinking Water Standards

Spring analytes that exceed primary (red and bold) and secondary (bold) drinking water standards are identified in Table F1 and summarized in Table F2 in Appendix F. The following results are apparent:

- Arsenic was the only constituent with reported concentrations above the MCL of 0.010 mg/L at sampled spring locations. Other sampled constituents were not detected above respective MCLs. Arsenic was detected above the MCL at seven of the ten sampled spring locations:
    - Deposit Stock Tank (0.025 – 0.031 mg/L),
    - Poison Spring (0.033 – 0.040 mg/L),
    - Sourdough Spring Lower (0.023 – 0.026 mg/L),
    - Sourdough Spring Upper (0.027 – 0.032 mg/L),
    - Twin Springs North (0.042 – 0.061 mg/L)
    - Twin Springs South (0.040 – 0.049 mg/L), and
    - Whiskey Spring (0.082 – 0.100 mg/L).

The highest arsenic detections were reported at Whiskey Spring (i.e., on the order of approximately 0.080 to 0.100 mg/L). Arsenic was not detected above the MCL at Government Corral Spring, Sagebrush Spring, or Lowe Spring.

- Aluminum was reported above the SMCL of 0.05 mg/L at these locations:
  - Government Corral Spring (0.06 mg/L, total) on November 22, 2013.
  - Twin Springs North (0.30 mg/L, total) on September 15, 2014, and (0.11 mg/L, dissolved phase) on March 13, 2013.

- Manganese was reported above the SMCL of 0.05 mg/L at Twin Springs North at concentrations ranging from 0.053 mg/L to 0.216 mg/L.

- Total dissolved solids (TDS) was reported above the SMCL of 500 mg/L at Lowe Spring with concentrations between 540 mg/L and 570 mg/L.

10.2.2. Water Quality Standards

Spring analytical results were compared to ODEQ water quality standards for both the Malheur River Basin and the Owyhee Basin as described in OAR 340-041[5]. Water quality in the Malheur River Basin and Owyhee Basin is managed to protect the designated beneficial uses listed in Table 201A (OAR 340-41-0201) for the Malheur River Basin and Table 250A (OAR 340-041-0250) for the Owyhee Basin. These beneficial uses include public and private domestic water supply, fish and aquatic life, and fishing.

Applicable water quality standards are listed in Table 30 (aquatic life criteria), Table 31 (aquatic life water quality guidance values), and Table 40 (human health criteria (HHC)) in OAR 340-041. For the aquatic life criteria, the standards are presented as Criterion Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) which indicate the maximum allowable average 1-hour and 96-hour average contaminant concentrations, respectively. Sampling results were compared to both the CMC and CCC values.

HHC are presented as “organism only” for areas in which fishing is the designated use and as “water + organism” for areas in which water supply and fishing are designated uses. In the Malheur River and Owyhee Basin, designated beneficial uses include water supply and fishing so the “water + organism” criteria apply.

The water quality parameters exceeding the aquatic life or HHC water quality standards at each spring sampling site are summarized in Table F4 in Appendix F.

The values shown in red in Table F4 are those that exceed the HHC. These include the following:

[5] Twin Springs North, Twin Springs South, and Whiskey Springs are located in the Owyhee Basin, all the other baseline springs are located in the Malheur River Basin.

- Arsenic was detected above the HHC level of 0.002 mg/L at eight of the ten sampled spring locations:
    - Deposit Stock Tank (between 0.025 – 0.031 mg/L).
    - Government Corral Spring (between 0.007 – 0.008 mg/L).
    - Poison Spring (between 0.033 – 0.040 mg/L).
    - Sagebrush Spring (between 0.007 – 0.008 mg/L).
    - Sourdough Spring Lower (between 0.023 – 0.026 mg/L).
    - Sourdough Spring Upper (between 0.027 – 0.032 mg/L).
    - Twin Springs North (between 0.042 – 0.061 mg/L).
    - Twin Springs South (between 0.040 – 0.049 mg/L).
    - Whiskey Spring (between 0.082 – 0.10 mg/L).

Values shown in blue in Table F4 in Appendix F are those that exceed the CCC. These include the following:

- Selenium was detected above the CCC level of 0.0042 mg/L dissolved and 0.0046 mg/L total at three of the ten sampled spring locations:
    - Deposit Stock Tank (between 0.0045 – 0.006 mg/L dissolved and 0.0048 – 0.0058 mg/L total).
    - Twin Springs North (between 0.0044 – 0.0045 mg/L dissolved).
    - Twin Springs South (between 0.0044 – 0.0049 mg/L dissolved).

Values shown in purple in Table F4 in Appendix F are those that exceed the CMC. These include the following:

- Zinc was detected above the CMC level at one of the ten sampled spring locations:
    - Sourdough Spring Upper (0.17 mg/L dissolved and 0.16 mg/L total on June 27, 2013.

10.2.3. General Geochemistry

The spring Piper diagrams for all sampling events are presented in G1 of Appendix G. The spring Stiff diagrams for all sampling events are presented in G2 of Appendix G.

Three predominant hydrogeochemical facies are apparent based on sampling events performed during 2013 and 2014 at spring locations:

- Calcium bicarbonate (Ca-HCO3) for Government Corral Spring, Sagebrush Spring, and Deposit Stock Tank.
- Sodium-potassium bicarbonate (Na/K-HCO3) for Poison Spring, Sourdough Springs (lower and upper), Twin Springs (North and South), and Lowe Spring.
- Sodium-potassium sulfate (Na/K-SO4) for Whiskey Spring.

An apparent spatial distribution is noted at certain spring locations (as Figure G5 in Appendix G). For example, springs with a dominant water type Ca-HCO3 (including Government Corral Springs, Sagebrush Springs, and Deposit Stock Tank) are located primarily on the east side of the deposit. A Na/K-HCO3 water type is more prevalent on the west side of the deposit (including Poison Springs, Sourdough Springs (Lower and Upper), and Twin Springs (Lower and Upper)). A Na/K-SO4 water type is apparent at Whiskey Spring.

10.3. Wells

10.3.1. Drinking Water Standards

Well analytes that exceed primary (red and bold) and secondary (bold) drinking water standards are identified in Table F1 and summarized in Table F3 in Appendix F. The following results are apparent:

- Arsenic was detected at above the drinking water MCL of 0.010 mg/L in all of the fifteen (15) sampled wells. The wells and the reported total arsenic values are listed below:
    - 59760 (between 0.0245 – 0.0283 mg/L).
    - 59761 (between 0.0219 – 0.0244 mg/L).
    - 59762 (between 0.163 mg/L) on December 16, 2017.
    - 59763 (between 0.0600 – 0.0787 mg/L).
    - 59766 (between 0.01847 – 0.0276 mg/L).
    - 59772 (between 0.0348 – 0.038 mg/L).
    - Bishop (0.0101 mg/L, total only) on September 15, 2014.
    - BLM (between 1.54 – 4.63 mg/L).
    - GMW17-32 (0.0799 mg/L) on December 5, 2018.
    - GMW17-33 (0.107 mg/L) on December 14, 2017.
    - GW-1 (between 0.0268 – 0.0313 mg/L).
    - GW4 (between 0.0111 – 0.0126 mg/L).
    - Prod-1 (between 0.0579 – 0.0615 mg/L).
    - PW-1 (between 0.0282 – 0.0331 mg/L).
    - PW-4 (between 0.0148 – 0.0221 mg/L).

- Antimony was detected at above the drinking water MCL of 0.006 mg/L at the following well locations:
    - 59762 (0.21 mg/L total and 0.298 mg/L dissolved) on December 12, 2017.
    - GMW17-32 (0.0374 mg/L total and 0.0371 mg/L dissolved) on December 15, 2018.
    - GMW17-33 (0.0244 mg/L total and 0.0217 mg/L dissolved) on December 14, 2017.

- Chromium (total) was detected above the MCL of 0.1 mg/L in GMW17-32 at a concentration of 0.3 mg/L during the December 2017 sampling event. Following re-development efforts (see Section 10.3.3), the chromium level in GMW17-32 dropped below the MCL based on sampling conducted on July 25, 2018. Chromium was not detected at concentrations above the MCL at other sampled locations. The presence of chromium in groundwater sampled at GMW17-32 in December 2017 is likely due to inadequate development, with water quality affected by drill cuttings or cement (SPF, 2018b). Portland cement can contain trace amounts of hexavalent chromium. Naturally occurring hexavalent chromium has been reported in groundwater within several western states (including Arizona, Nevada, and California). Chromium was also detected (below the MCL) at other sampled locations within the Grassy Mountain vicinity, including 59760, 59761, 59763, 59766, 59772, GW-4, PW-1, and PW-4 at concentrations ranging from 0.0005 mg/L to 0.0017 mg/L, suggesting the presence of a naturally occurring source for chromium at low concentrations.

- Lead was detected above the MCL of 0.015 mg/L at the following well locations:

    - 59766 at a concentration of 0.019 mg/L (total only) on March 14, 2013.
    - GMW17-32 at a concentration of 0.0204 mg/L (total only) on December 11, 2017.
    - On both of these sample events, the dissolved lead concentrations were less than the method detection limit. Following re-development, the GMW17-32 lead concentration was less than the MCL as measured on July 25, 2018.

- Aluminum was detected above the SMCL of 0.05 mg/L in the following well locations:

    - 59760 (between 0.12 – 0.74 mg/L total).
    - 59762 at a concentration of 3.37 mg/L total on December 6, 2017.
    - 59763 (between 0.09 – 2.07 mg/L total).
    - 59766 (between 1.84 – 25.6 mg/L total).
    - GMW17-32 at a concentration of 0.07 mg/L on December 5, 2018.
    - GW-4 (between 0.6 – 1.68 mg/L total and 0.06 – 0.07 mg/l dissolved).
    - PW-1 (between 0.06 – 0.23 mg/L total and 0.08 mg/l dissolved).
    - PW-4 (between 3.94 – 8.11 mg/L total and 0.07 – 0.11 mg/L dissolved).

    Total concentrations of aluminum are typically much higher than dissolved concentrations which suggests that sediment in the samples is the source of the most of the detected aluminum.

- Iron was detected above the SMCL of 0.3 mg/L in the following well locations:

    - 59760 at a concentration of 0.37 mg/L total on September 11, 2014.
    - 59762 at a concentration of 4.54 mg/L total on December 6, 2017.
    - 59763 at a concentration of 1.45 mg/L total on March 18, 2013.
    - 59766 (between 2.77 – 23.0 mg/L total and 0.71 – 1.06 mg/L dissolved).
    - BLM (between 47.4 – 201 mg/L total and 54.6 – 200 mg/L dissolved).
    - GMW17-32 at a concentration of 0.52 mg/L total on December 5, 2018.
    - GW-4 (between 0.33 – 0.59 mg/L total).
    - PW-1 (between 0.32 – 1.04 mg/L total).
    - PW-4. (between 3.98 – 23.5 mg/L total).

    Similar to aluminum, most of these wells show high total iron concentrations but low dissolved iron concentrations, suggesting that the source of iron in the samples is sediment. Exceptions are Well 59766 and the BLM well, both with high dissolved iron concentrations. The presence of iron in groundwater is consistent with the lithology in the area, specifically the silicified, iron-stained knob that comprises Grassy Mountain.

- Manganese was detected above the SMCL of 0.05 mg/L in the following well locations:

    - 59762 at a concentration of 0.589 mg/L total and 0.535 dissolved.
    - 59763 (between 0.0992 - 0.023 mg/L total and 0.0838 – 0.1974 mg/L dissolved).
    - 59766 (between 0.452 – 0.73 mg/L total and 0.263 – 0.475 mg/L dissolved).
    - BLM (between 0.43 – 1.65 mg/L total and 0.532 – 1.67 mg/L dissolved).
    - Prod 1 at a concentration of 0.0513 mg/L dissolved on March 16, 2014.
    - PW-4 (between 0.0509 – 0.1679 mg/L total).

- TDS was reported above the SMCL of 500 mg/L at the following well locations:

    - 59762 at a concentration of 648 mg/L.
    - 59763 (between 1,090 and 1,220 mg/L).
    - 59766 (between 640 and 674 mg/L).
    - BLM (between 1,080 and 1,850 mg/L).
    - GMW17-32 at a concentration of 920 mg/L.
    - PW-4 (between 510 and 590 mg/L).

- Sulfate was reported above the SMCL of 250 mg/L in the five following wells:

- 59762 at a concentration of 333 mg/L.
- 59763 (between 377 and 626 mg/L).
- 59766 (between 300 and 320 mg/L).
- BLM (between 541 and 1220 mg/L).
- GMW17-32 at a concentration of 532 mg/L.

10.3.2. General Geochemistry

The well Piper diagrams for all sampling events are presented in G3 of Appendix G. The well Stiff diagrams for all sampling events are presented in G4 of Appendix G. The same predominant hydrogeochemical facies noted for springs are also apparent in wells within the Grassy Mountain project vicinity:

- Calcium bicarbonate (Ca-HCO3) for 59760, 59761, 59722, and GW-1.
- Sodium-potassium bicarbonate (Na/K-HCO3) for Bishop, GW-4, Prod-1, and PW-1.
- Sodium-potassium sulfate (Na/K-SO4) for 59763, 59766, BLM, 59762, and GMW17-32.

Water quality trends for wells PW-4 and GMW17-33 could be characterized as Na/K-HCO3 or Na/K-SO4 water types based on anion trends. A fourth water quality type (calcium-sulfate) was previously described for wells GW-3 and GW-5 based on historical sampling events (JMM, 1991). A calcium-sulfate water type has not been observed elsewhere based on subsequent sampling events.

The predominant water types appear to have a spatial distribution, Figure G5, attributed to local geologic conditions and areas of recharge/discharge. Predominantly Ca-HCO3 and Na/K-HCO3 water types are noted in areas hydraulically upgradient of the deposit and downgradient within the basin. Groundwater sampled from wells located hydraulically downgradient of the deposit appear to exhibit Na/K-SO4 and Ca-SO4 water types. The presence of calcium may be attributed to areas with basalt deposits, and sodium may be associated with volcanic tuff and sedimentary deposits (SPF, 2016a). Sulfate may be associated with areas downgradient of the ore body and potentially attributed to longer residence times due to lower hydraulic conductivity and/or oxidation and leaching of the ore deposit (ABC, 1992).

Deeper wells (59762 and GWM17-32) suggest a predominant Na/K-SO4 water type that is also apparent at shallow well locations (i.e., BLM, 59763, and 59766) hydraulically downgradient of the deposit.

10.3.3. Re-Development of GMW17-32

The pH measured from GMW17-32 following test pumping was unusually high, reported at 11.3 by the laboratory (SPF 2018b). A pH of between 8 and 9 is expected based on the nearby deep well 59762 and Poison Spring. The conductivity values were also

higher than expected when compared to well 59762. The high pH and conductivity values were attributed to inadequate development, with these water quality parameters likely affected by drill cuttings or cement (SPF2018b). Development of this well is challenging due to low yield.

The well was first re-developed by pumping in July 2018, when a total of six casing volumes were removed from the well. The pH reported by the laboratory was 10.3, a standard unit lower than the pH prior to re-development. The specific conductance following re-development was also considerably lower, 1209 µS/cm at 25°C versus 2095 µS/cm at 25°C. The lower pH and conductivity values, along with improved water clarity, suggests that the re-development has had a positive effect on water quality. Based on these results, and after discussion with OWRD and DOGAMI, additional development was performed on the well in November and December 2018 by pumping the well.

Between November 9 and December 4, 2018, the well was pumped on 17 different occasions. During each pumping event the well was pumped at approximately 1.5 to 2.5 gpm, until the water level in the well reached the pump suction. During each event, pumping rate, pH, and water appearance were recorded every 10 to 15 minutes.

A total of approximately 2,200 gallons were pumped from the well during the 17 pumping events, equal to approximately 24 casing volumes. Between November 9 and December 4, the pH declined from over 10 to approximately 8.5. The additional re-development efforts were successful in reducing the pH of the groundwater produced from the well to a level considered to be representative of the aquifer. The well was sampled again for the complete suite of analytes on December 5, 2018. At the time of sampling the pH of the water was measured in the field at 8.39. The water quality results from all three sampling events are presented in Table 5.

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.		**GMW17-32 Water Quality Results**							
Analytes	**MCL**	**12/11/17**	**7/25/18**	**12/5/18**	**Analytes**	**MCL**	**12/11/17**	**7/25/18**	**12/5/18**
Aluminum, dissolved	0.05*	**0.25**	0.04	<0.03	**Manganese, dissolved**	0.05*	<0.0004	<0.0004	0.0057
Aluminum, total	0.05*	**4.78**	**0.09**	**0.07**	**Manganese, total**	0.05*	**0.206**	0.006	0.0085
Antimony, dissolved	0.006	**0.115**	**0.0939**	**0.0371**	**Mercury, dissolved (ng/L)**	2000	1.6	0.8	<0.2
Antimony, total	0.006	**0.0666**	**0.0876**	**0.0374**	**Mercury, total (ng/L)**	2000	84	1.7	1.5
Arsenic, dissolved	0.010	**0.0588**	**0.0871**	**0.0789**	**Molybdenum, dissolved**	NA	0.0965	0.0287	0.0175
Arsenic, total	0.010	**0.116**	**0.0881**	**0.0799**	**Molybdenum, total**	NA	0.108	0.0322	0.0194
Barium, dissolved	2	0.036	0.035	0.032	**Nickel, dissolved**	NA	0.001	<0.0006	<0.0006
Barium, total	2	0.135	0.038	0.031	**Nickel, total**	NA	0.147	0.0021	0.0009
Beryllium, dissolved	0.004	<0.00005	<0.00005	<0.00005	**Nitrate as N, dissolved**	10			
Beryllium, total	0.004	0.00056	<0.00005	<0.00005	**Nitrate/Nitrite as N**	10	0.68	0.06	0.06
Bicarbonate as CaCO3	NA	<2	<2	78.7	**Nitrate/Nitrite as N, dissolved**	10			
Bismuth, dissolved	NA	<0.04	<0.04	<0.04	**Nitrite as N, dissolved**	1			
Bismuth, total	NA	<0.04	<0.04	<0.04	**Nitrogen, ammonia**	NA	1.2	0.53	0.22
Boron, dissolved	NA	0.24	0.24	0.31	**pH (standard units)**	NA	11.3	10.3	8.2
Boron, total	NA	0.26	0.25	0.3	**pH measured at (°C)**	NA	21.2	19.8	22.6
Cadmium, dissolved	0.005	<0.0001	<0.0001	<0.00005	**Phosphorus, total**	NA	0.23	<0.02	<0.02
Cadmium, total	0.005	0.0001	<0.0001	<0.00005	**Potassium, dissolved**	NA	18.6	13.8	10.4
Calcium, dissolved	NA	65.1	27.8	49.8	**Potassium, total**	NA	21.3	14.1	10.8
Calcium, total	NA	91	29.2	53.6	**Total Dissolved Solids**	500*	**920**	**768**	**830**
Carbonate as CaCO3	NA	45.4	36	<2	**Total Suspended Solids**	NA	138	5	5
Chloride	250*	31.1	33.2	39.6	**Scandium, dissolved**	NA	<0.1	<0.1	<0.1
Chromium, dissolved	0.1	0.0008	0.0006	<0.0005	**Scandium, total**	NA	<0.1	<0.1	<0.1
Chromium, total	0.1	**0.3**	0.0042	0.0016	**Selenium, dissolved**	0.05	0.0015	0.0001	<0.0001
Cobalt, dissolved	NA	0.00033	0.00006	0.00018	**Selenium, total**	0.05	0.0015	0.0002	<0.0001
Cobalt, total	NA	0.00637	0.00021	0.00018	**Silver, dissolved**	0.1*	<0.00005	<0.0005	<0.0001
Conductivity @25C (umhos/cm)	NA	1530	1210	1240	**Silver, total**	0.1*	0.0002	<0.0005	<0.0001
Copper, dissolved	1.3	0.0026	<0.0004	<0.0008	**Sodium, dissolved**	NA	211	197	202
Copper, total	1.3	0.0234	<0.0004	<0.0008	**Sodium, total**	NA	211	203	211
Cyanide, total	0.2	<0.003	<0.003	<0.003	**Strontium, dissolved**	NA	1.35	1.03	1.39
Cyanide, WAD	0.2	<0.003	<0.003	<0.003	**Strontium, total**	NA	1.56	1.02	1.45
Fluoride	4	1.12	1.69	1.76	**Sulfate**	250*	**381**	**417**	**532**
Gallium, dissolved	NA	<0.1	<0.1	<0.1	**Thallium, dissolved**	NA	<0.0001	<0.0001	<0.0001
Gallium, total	NA	<0.1	<0.1	<0.1	**Thallium, total**	NA	0.0001	<0.0001	<0.0001
Hardness as CaCO3	NA				**Tin, dissolved**	NA	0.0014	<0.0001	<0.0008
Hardness as CaCO3 (dissolved)	NA	163	76	137	**Tin, total**	NA	0.0016	<0.0001	<0.0008
Hardness as CaCO3 (total)	NA				**Titanium, dissolved**	NA	<0.005	<0.005	<0.005
Hydroxide as CaCO3	NA	82.7	13.7	<2	**Titanium, total**	NA	0.106	<0.005	<0.005
Iron, dissolved	0.3*	0.07	<0.02	<0.02	**Total Alkalinity**	NA	128	49.7	78.7
Iron, total	0.3*	**35.5**	**0.34**	**0.52**	**Uranium, dissolved**	0.030	<0.0001	0.0001	0.0013
Lead, dissolved	0.015	<0.0001	<0.0001	<0.0001	**Uranium, total**	0.030	0.0018	0.0001	0.0014
Lead, total	0.015	**0.0204**	0.0001	0.0003	**Vanadium, dissolved**	NA	0.0082	0.002	<0.0005
Lithium, dissolved	NA	0.339	0.392	0.42	**Vanadium, total**	NA	0.016	0.0024	0.0005
Lithium, total	NA	0.35	0.384	0.436	**Zinc, dissolved**	5	<0.01	<0.01	<0.01
Magnesium, dissolved	NA	<0.2	1.5	3.1	**Zinc, total**	5	0.06	<0.01	<0.01
Magnesium, total	NA	1.1	1.5	3.2					

Table 5. GMW17-32 Water Quality Results

10.4. **Quality Assurance/Quality Control (QA/QC)**

10.4.1. Background

This section summarizes QA/QC results for the 2013, 2014, 2017, and 2018 sampling events. Duplicate samples, equipment blanks, transfer blanks, and mercury transfer

blanks were collected during each quarterly event and submitted to ACZ Laboratories under chain-of-custody procedures in an effort to assess the validity of water quality results. These QA/QC samples were collected at a 10% sampling frequency, or one set per sampling event.

For sites where duplicate samples were collected, the original and duplicate samples were compared using difference and relative percent difference. For analytical results less than the minimum detection limit, an estimated value was generated by dividing the minimum detection limit by the square root of 2 (~1.41). Results are considered to be significantly different if two conditions apply: (1) at least one of the original or duplicate results are greater than five times the minimum detection limit (MDL) and (2) the percent difference between results is equal to or greater than 20%.

For equipment blanks and transfer blanks, the arithmetic difference and percent difference were calculated between the blank and ideal conditions for deionized water (all parameters below detection), using the same approach as for duplicate samples.

Laboratory analytical reports for all sampling events are provided as Appendix H. The QA/QC results are presented in Appendix I.

10.4.2. 2013 Field QA/QC

10.4.2.1. Sample QA/QC

The significant QC/QC results from 2013 are summarized below:

- The transfer blank from the 1st Quarter 2013 showed a significant difference for total tin.
- The Twin Springs South spring duplicate sample from the 1st Quarter 2013 showed a significant difference for total manganese.
- The well 59772 duplicate sample from the 1st Quarter 2013 showed a significant difference for dissolved cobalt.
- The well GW-4 duplicate sample from the 4th Quarter 2013 showed a significant difference for total aluminum and total iron.

10.4.2.2. Well Pump QA/QC

An equipment and transfer blank were collected from one of the permanent pump setups prior to installation. The well pump equipment blank, when compared to ideal conditions for deionized water, showed significant differences for dissolved cobalt and total manganese.

10.4.3. 2014 Field QA/QC

10.4.3.1. Sample QA/QC

Duplicate samples with significantly different results for wells and springs from 2014 sampling are summarized below in Table 6 and Table 7, respectively.

Well Duplicate Sample Location	Quarterly Event	Significantly Different Parameters
59760	Q1-2014	Aluminum, total
		Arsenic, dissolved
		Copper, dissolved
		Copper, total
		Iron, total
		Lead, total
		Manganese, total
		Vanadium, dissolved
PW-4	Q2-2014	Aluminum, total
		Beryllium, total
		Cobalt, dissolved
		Cobalt, total
		Iron, total
		Lead, total
		Magnesium, total
		Mercury, total
		Residue, Non-Filterable (TSS) @ 105C
		Titanium, total
		Uranium, total
59763	Q3-2014	Cobalt, dissolved
		Iron, dissolved
		Selenium, total
		Sulfate

Table 6. Well Duplicate Sample Results

Spring Duplicate Sample Location	Quarterly Event	Significantly Different Parameters
Deposit Stock Tank	Q1-2014	Barium, dissolved
		Boron, dissolved
		Calcium, dissolved
		Cobalt, dissolved
		Hardness as CaCO3
		Magnesium, dissolved
		Potassium, dissolved
		Sodium, dissolved
		Strontium, dissolved
Twin Springs South	Q2-2014	Cobalt, dissolved
		Manganese, total
Government Corral Spring	Q3-2014	Cobalt, dissolved

Table 7. Spring Duplicate Sample Results

None of the quarterly equipment blanks showed any significant differences between any of the sampled parameters. This result indicates that the sampling equipment was not influencing the sampling results. None of the quarterly transfer blanks showed any significant differences between any of the sampled parameters. This result indicates that the sampling procedure was not influencing the sampling results.

At least three mercury transfer blanks were collected in the field during each quarterly sampling event and submitted to the laboratory for mercury analysis. All of the quarterly mercury transfer blanks were below the MDL for mercury (0.2 ng/L). This result indicates that the sampling procedure or environment were not influencing the mercury results.

10.4.4. Laboratory QA/QC

ACZ laboratories prepared Level 2 analytical reports for each sampling event[6], including internal QA/QC procedures and results. QA/QC measures involved performing statistical analyses of the results for each sample batch and included trip, spike, and duplicate blanks for meeting the laboratory's specified RPD of 20% (SPF, 2015a). Level 2 analytical reports for all sampling events are included in Appendix H.

[6] All quarterly sampling events and 2017-2018 sampling.

11. CONCLUSIONS

The following can be concluded from the baseline water resources monitoring activities within the proposed Grassy Mountain Mine study area:

- Seven quarterly sampling events occurred from 2013 to 2014 in ten springs (when ample flow available) and twelve wells on a schedule in accordance with the Work Plan.

- After the development of 59762 and construction and development of GMW17-32 and GMW17-33, these wells were sampled during test pumping. Two additional development and sampling events occurred in GMW17-32 to obtain more representative results.

- Quarterly manual static water level or flow measurements were obtained from twenty-four (24) monitoring wells and eleven (11) background springs. The quarterly measurements were maintained from 2013 through 2018 for 19 wells and from the 3rd Quarter 2014 through 2018 for another five (5) wells. Due to ownership changes, no monitoring occurred during the first and second quarters of 2016

- Groundwater elevation trends appear relatively stable over time in wells throughout the project area, based on a monitoring period that spans several years. Some wells show influence of seasonal recharge, particularly during periods of above average precipitation. Other wells show fluctuations attributed to groundwater pumping or to drilling activities.

- Groundwater flow generally occurs from the southeast to the northwest in the vicinity of the Project, from higher elevations along the base of Grassy Mountain (~4,000 feet asl) to lower elevations along Negro Rock Canyon (~3,200 feet asl).

- Potentiometric surface maps based on shallow wells support a consistent flow direction without seasonally influenced variations. Groundwater flow appears to follow surface topography, generally to the northwest. The pattern of groundwater flow shows local variations attributed to the presence of faults, fractures, lithologic facies changes, vertical gradients, or some combination of these influences.

- Arsenic is present in groundwater within the Grassy Mountain vicinity. Concentrations exceeded the drinking water MCL at all of the 15 sampled well locations and at 8 of the 10 sampled spring locations.

- Other exceedances of the drinking water MCL included antimony (two samples), chromium (GMW17-32 prior to additional development), and lead (three samples, including one from GMW17-32 prior to additional development).

- Numerous samples from wells and springs exceeded the drinking water SMCLs for aluminum, iron, manganese, TDS, and sulfate. Most, but not all, exceedances for aluminum and iron appear to be associated with sediment in groundwater samples.

- Groundwater within the Grassy Mountain vicinity exhibits different water quality types (Ca-HCO3, Na/K-HCO3, or Na/K-SO4) based on spatial distribution, attributed to subsurface lithology/facies characteristics.

11.1. **Recommendations**

Paramount, Calico and SPF recommend that the baseline data collection, compilation and results described in this report be considered complete based on the Work Plan approved for the Grassy Mountain Project Area with respect to groundwater characterization.

12. LIST OF PREPARERS

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SPF Water Engineering (SPF), 2017a. Memorandum Re.: Draft Vibrating Wire Piezometer Standard Operating Procedures (SOP-GW002). Prepared for Calico Resources and Major Drilling. Prepared by SPF, Boise, Idaho. April 26, 2017.

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SPF Water Engineering (SPF), 2018d. Memorandum Re.: Transmittal of 2nd Quarter 2018 Water Resources Baseline Data. Prepared for the Calico Technical Review Team. Prepared by SPF, Boise, Idaho. September 20, 2018.

Appendix A
TRT Correspondence

Oregon
Kate Brown, Governor

Department of Geology & Mineral Industries
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January 20, 2016

Vance Thornsberry
Calico Resources
PO Box Q
Vale, OR 97918

Re: Calico Grassy Mountain Baseline Data Collection
(Sent via email and USPS, return receipt requested)

Dear Mr. Thornsberry:

The *Draft Environmental Baseline Study Work Plans* were received from Calico Resources USA Corporation (Calico) on September 20, 2012. Public notice was provided as required by Oregon Administrative Rules (OAR) 632-037-0040. Public hearings were scheduled and held in Bend, Oregon on October 9, 2012 (remote access provided in Portland and Pendleton) and in Ontario, Oregon on October 16, 2012 (remote access provided in Portland and Pendleton). Written comments were accepted by the Oregon Department of Geology and Mineral Industries (DOGAMI) until November 6, 2012.

The Technical Review Team (TRT) met on 7/16/2012, 10/4/2012, 10/31/2012, 12/13/2012, 2/11/2013, 2/25/2013, and 3/8/2013 to review and provide comments on the draft environmental baseline study work plans. Additional information was provided by Calico in response to TRT comments. The *Final, Revised Environmental Baseline Study Work Plans* were approved by the TRT in March, 2013. Additional TRT meetings were held 6/11/2013, 11/19/2014, 3/30/2015, 9/28/2015, and 1/4/2016.

Calico proceeded to collect baseline data and file that information with the State. DOGAMI coordinated the consolidated responses of the appropriate state agencies in each discipline of the work plans.

Second Amended Notice of Intent
On August 3, 2015, Calico filed supplemental environmental baseline data as a result of filing its *Second Amended Notice of Intent*. The *Second Amended Notice of Intent* changed the ore processing, tailing management, and administration building locations to federal land managed by the Bureau of Land Management (BLM) and eliminated an associated haul road. The original *Notice of Intent* was filed February 8, 2012 and an amended *Notice* was filed June 11, 2012. The *Second Amended Notice of Intent* was filed July 17, 2015 and proposed to locate the ore processing facility, administrative building, and tailings management area on BLM land immediately adjacent to the proposed mine site. The original and first amended *Notice of Intent* had proposed a location on private property west of the proposed mine, as well as a connecting haul road. These areas are no longer part of the proposal.

Public notice was provided as required by Oregon Administrative Rules (OAR) 632-037-0040. Public hearings were scheduled and held in Bend, Oregon on August 26, 2015 and Ontario, Oregon on September 1, 2015. Written comments were accepted until September 15, 2015.

As part of the *Second Amended Notice of Intent*, Calico filed additional, supplemental and revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. By this letter, the TRT accepts the supplemental and revised baseline data, with the additional modifications to the water resources work plans discussed below.

Baseline Data Review

DOGAMI routinely received baseline data information from Calico. The baseline data was assigned to the appropriate state agencies for review and additional coordination, as necessary. For some baseline data information, additional information was requested. When the baseline data collection was deemed complete and conformed to the State approved *Final, Revised Environmental Study Work Plans*, adopted by the TRT in March, 2013, DOGAMI responded to Calico with an acceptance letter.

Baseline Data Topics

The information below summarizes the data collected and submitted by Calico and the State review and response by study topic area.

Geology & Soils

The initial baseline data for Geology and Soils was received from Calico on November 12, 2014 and assigned to DOGAMI, Oregon Department of Agriculture, Water Resources Department (WRD), and Oregon Department of Environmental Quality (DEQ) for review. The State responded on January 27, 2015. A revised baseline report was submitted on February 24, 2015 by Calico. The State received a revised Eronite Sampling and Analysis Plan on February 25, 2015.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, removing the haul road and adding improvements to the mine site access road. Additional Geology & Soils information was submitted. This was reviewed by the appropriate state agencies. DOGAMI responded to Calico on December 18, 2015 that the Geology & Soils information conformed to the adopted baseline data methodologies.

Geochemistry

The initial baseline data was received from Calico on August 7, 2015, and an additional workplan was submitted on August 9, 2015. Based on review by DOGAMI's geochemistry contractor, a revised report was received from Calico on November 6, 2015, which was reviewed by DOGAMI's geochemistry contractor.

The Technical Review Team Geochemistry Subcommittee met on 2/5/2013, 11/20/2015, and 12/18/2015 to discuss and review the geochemistry baseline submittal. A revised report was received by the State on December 29, 2015, and an amended revised report was received on December 30, 2015.

The State Agencies participating in the Geochemistry Subcommittee include DOGAMI, Water Resources Department (WRD), and Oregon Department of Environmental Quality (DEQ); the Bureau of Land Management also participates.

The TRT subcommittee unanimously approved the geochemistry baseline methodology work plan on January 4, 2016.

Surface Water & Groundwater

Surface and groundwater sampling was conducted starting in the first quarter of 2013. One full year of groundwater and surface water sampling was completed with chemical analysis.

Additional groundwater level sampling has continued. Several adjustments to the approved baseline sampling methodology were made for surface and groundwater sampling, including:

- Revised sampling preservation practices to ensure temperature sensitive samples arrive to the laboratory at recommended temperatures (3/25/14).
- Revised nitrite/nitrate sampling methods; remove inorganic arsenic/retain total arsenic, revise avian use field collection form (8/8/13).
- Add uranium to water quality parameters to be sampled (groundwater and surface water) (5/30/13).

Water resources sampling events and the State responses are summarized in the table below:

Surface and Groundwater			
	Date Received	*State Response*	*Notes*
...1Q13	6/21/13	TRT discussion at 7/18/13 mtg	
...2Q13	9/4/13	DOGAMI letter 10/24/13	
...3Q13	12/16/13	DOGAMI letter to Calico 2/14/14	
...4Q13	1/30/14	DOGAMI letter to Calico 12/10/14	
2013 Annual Report	1/19/15	DOGAMI letter to Calico 12/10/14 DOGAMI letter to Calico 5/19/15	

	Date Received	*State Response*	*Notes*
...1Q14	6/4/14	DOGAMI letter to Calico 12/10/14	
...2Q14	9/5/14	DOGAMI letter to Calico 12/10/14	
...3Q14	12/5/14	DOGAMI letter to Calico 1/27/15	
...4Q14	1/19/15	DOGAMI letter to Calico 5/19/15	
...1Q15	4/9/15	DOGAMI letter to Calico 5/19/15	Water level data only
...2Q15	7/02/15	DOGAMI letter to Calico 9/16/15	Water level data only
...3Q15	11/4/15	DOGAMI letter to Calico 12/17/15	Water level data only
...GW Characterization Report	11/6/15	WRD discussion; 12/10/15 Water Resources Subcommittee	

The members of the TRT Water Resources Subcommittee include DOGAMI, Water Resources Department, DEQ, and Department of State Lands. The Bureau of Land Management also participates. The TRT Water Resources Subcommittee met to review water resources related information on 10/22/2012, 1/22/2013, 7/18/2013, 10/3/2013, 10/31/2013, 11/22/2013, 1/22/2014, 7/30/2014, 11/7/2014, 1/20/2015, 3/30/2015, and 12/10/2015.

Calico filed a request to modify the water resources baseline data with DOGAMI on December 19, 2015. The Water Resources Subcommittee has reviewed the request and recommends that the delay of the deep well(s) installation and the delay of the conceptual groundwater model are reasonable. The delay on the installation of the ore body well installation is expected circa the 3rd or 4th quarter of 2016. Calico was advised of these modifcations in a letter to the Calico dated January 12, 2016.

Terrestrial Vegetation

The initial baseline data for Terrestrial Vegetation was received from Calico on May 20, 2014. The reviewing State agencies included DOGAMI and the Oregon Department of Agriculture. The State responded on June 24, 2014.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities and removing the haul road between the mine site and the former proposed processing and tailings sites. Additional Terrestrial Vegetation information was submitted. This was reviewed by the Department of

Agriculture. DOGAMI responded to Calico on October 23, 2015 that the Terrestrial Vegetation information conformed to the adopted baseline data methodologies.

Wetlands and Waters of the State
The initial wetlands delineation was submitted by Calico to the Department of State Lands on December 18, 2012. The delineation was approved by the Department of State Lands on July 15, 2014.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, removing the haul road, and adding improvements to the mine access road. A revised wetlands delineation report was submitted by Calico to the Department of State Lands on August 21, 2015. An amended wetlands delineation report was filed by Calico with the Department of State Lands on September 23, 2015. The Department of State Lands approved the wetland delineation report on November 9, 2015.

Wildlife Resources
The initial baseline data for Wildlife Resources was received from Calico on September 4, 2014. The information was reviewed by the Oregon Department of Fish and Wildlife (ODFW). ODFW requested additional information and revisions to the baseline report. A revised report was received from Calico on October 14, 2014 and was reviewed by ODFW and accepted on October 21, 2014.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. ODFW staff reviewed the *Second Amended Notice of Intent* and its impact on wildlife resources. ODFW requested additional information on August 24, 2015. After reviewing that additional information, ODFW concluded that the existing wildlife resources baseline information was sufficient for the amended NOI boundaries.

Aquatic Resources
The initial baseline data for Aquatic Resources was received from Calico on June 13, 2014. The information was reviewed by the Oregon Department of Fish and Wildlife (ODFW), Department of State Lands, and Oregon DEQ. The State requested additional information in June, 2014. Calico filed an amended aquatic resource baseline report on November 18, 2014. DOGAMI, on behalf of the participating State Agencies, requested additional information. A revised report based on the Second Amended Notice of Intent was received from Calico on February 17, 2015, and was accepted by the State on March 19, 2015.

Grazing Management
The initial baseline data for Grazing Management was received from Calico on June 10, 2015. The baseline data encompassed the area included in the

Second Amended Notice of Intent. The information was reviewed by the Oregon Department of Agriculture. The State accepted the baseline information for Grazing Management on June 30, 2015.

Visual Resources

The initial baseline data for Visual Resources was received from Calico on November 11, 2014. There are no Oregon requirements for visual resources baseline assessment in the Oregon regulations or statues. The State responded to Calico on January 6, 2015.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. Calico filed an amended visual resources baseline report on August 3, 2015. The State accepted Calico's letter on September 19, 2015.

Air Quality

Calico collected air quality baseline information according to the approved work plan. The State approved a revision to the work plan that removed 'elemental analysis' of particulate samples (4/17/15)

Calico collected quarterly ambient and meteorological baseline air quality data, and the State response is summarized in the table below:

Air Quality Baseline Data

Quarterly Reporting	*Date Received*	*State Response*
...3Q14	11/21/14	DOGAMI letter to Calico 1/27/15
...4Q14	2/13/15	DOGAMI letter to Calico 3/19/15
...1Q15	7/22/15	DOGAMI letter to Calico 9/10/15
...2Q15	8/6/15	DOGAMI letter to Calico 9/22/15
...3Q15	10/29/15	DOGAMI letter to Calico 11/19/15

The final air quality annual report was received by the State of Oregon on November 10, 2015. The air quality baseline data was reviewed by the Oregon Department of Environmental Quality (DEQ), and determined by DEQ staff to conform to both the Final Revised Environmental Baseline Data Study Work Plans (approved by the State on March 8, 2013) and the Quality Assurance Project Plan approved by DEQ in September 2014. The State responded to Calico accepting the baseline air quality data on December 30, 2015.

Noise

The initial baseline data for Noise was received from Calico on October 14, 2014. An independent contractor was used by the State to review the report. DOGAMI provided comments to Calico and requested revisions in the baseline

noise report. Calico submitted a revised noise baseline report on January 20, 2015 and DOGAMI accepted the baseline report in a letter January 27, 2015.

Cultural Resources
The initial baseline data for cultural resources was received from Calico on February 16, 2015. The State Historic Preservation Office (SHPO) reviewed the information. Revisions to the baseline report were requested in a letter dated March 19, 2015 to Calico.

Calico provided additional baseline data information on cultural resources on December 7, 2015.

On January 4, 2014 the State Historic Preservation Office (SHPO) stated that it had received the preliminary report and provided comments regarding the adequacy of the report. SHPO also noted that since the project area has changed and is now on BLM property, SHPO will need to hear from BLM under section 106, which is a federal requirement. On January 14, 2016 SHPO noted that the State requirements for baseline data collection have been met.

Land Use
The initial baseline data for land use was received from Calico on July 6, 2015. The information was reviewed by the Oregon Department of Agriculture, Department of Land Conservation & Development, and Malheur County.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. Additional supplemental information was provided on land use. The supplemental information was reviewed by the Oregon Department of Agriculture, Department of Land Conservation & Development, and Malheur County.

The State accepted the supplemental land use baseline information on October 23, 2015.

Transportation
The initial baseline data for Transportation was received from Calico on July 6, 2015. The information was reviewed by Malheur County.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. Additional supplemental information was provided on transportation. The supplemental information was reviewed by Malheur County.

The State accepted the supplemental transportation baseline information on October 14, 2015.

Socio-Economic
The initial baseline data for socio-economics was received from Calico on July 6, 2015. The information was reviewed by the Eastern Regional Solutions Team. The State accepted the baseline information for socio – economic factors on October 14, 2015.

Environmental Justice
The initial baseline data for Environmental Justice was received from Calico on June 23, 2015. The information was reviewed by the Oregon Department of Environmental Quality. The State accepted the baseline information for Environmental Justice on October 14, 2015.

Recreation
The initial baseline data for Recreation was received from Calico on July 6, 2015. There are no Oregon requirements for Recreation resources baseline assessment in the Oregon regulations or statues. The State responded to Calico on August 3, 2015.

As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. Calico filed an amended the Recreation resources baseline report on August 3, 2015. The State responded to Calico on October 19, 2015.

Wild & Scenic or Recreational Rivers
Area of Critical Environmental Concerns
Research Natural Areas
Outstanding Natural Areas
The information in the baseline data methodologies report documenting no Wild & Scenic areas, areas of critical environmental concern or outstanding natural areas adequate for baseline. The State approved the baseline data and concluded no additional information was needed

Oregon Natural Heritage Plan
The State requested that Calico include a review of the Oregon Natural Heritage Plan as part of the baseline data gathering in a January 26, 2015 letter. As part of the *Second Amended Notice of Intent*, Calico filed additional, revised baseline data showing a new location and layout for the proposed processing and administration facilities, and removing the haul road. Calico filed additional information regarding areas included in the Oregon Natural Heritage Plan in the supplemental information filed August 3, 2015. The State accepted the information on January 12, 2016.

Completion of Baseline Data Collection
On January 14, 2016 the Technical Review Team determined that collection of baseline data under the approved methodologies is complete. Subject to any additional data verification required under ORS 517.969, the baseline data may be used by Calico to support the consolidated application as provided in ORS 517.971 and the environmental evaluation as provided under ORS 517.979.

We appreciate the work by Calico and its consulting team to work with the Technical Review Team to gather and evaluate the baseline environmental data at the Grassy Mountain site.

Please let me know if you have any questions.

Sincerely,

Richard Riggs
Assistant Director
Oregon Dept. of Geology and Mineral Industries
Manager, Mineral Land Regulation & Reclamation Program

cc: Technical Review Team
Rich Richins, Calico
Christine Whittaker, HDR

Appendix B
Well and Spring Inventory

Table B1. Baseline Water Level and Water Quality Data Collection Inventory for Well Locations

Location	Water Level Monitoring (2013 - 2018)		Water Quality Sampling (2013)				Water Quality Sampling (2014)				Water Quality Sampling (2017)	Water Quality Sampling (2018)	
	Manual	Continuous (Pressure Transducer)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q2	Q4
GW-1	X	X	x	x[a]	x	x	x	x	x	x	--	--	--
GW-2	X	X	--	--	--	--	--	--	--	--	--	--	--
GW-3	X	--	--	--	--	--	--	--	--	--	--	--	--
GW-4	X	X	x	x	x	x[a]	x	x	x	x	--	--	--
GW-5	X[d]	--	--	--	--	--	--	--	--	--	--		
GW-6	X	--	--	--	--	--	--	--	--	--	--	--	--
89-2	X	--	--	--	--	--	--	--	--	--	--	--	--
Prod 1	X	--	x	x	x	x	x	x	x	x	--	--	--
PW-1	X	--	x	x	x	x	x	x	x	x	--	--	--
PW-4	X	--	x	x	x	x	x	x[a]	x[a]	x	--	--	--
BLM	X	--	x	x	x	x	x	x	x	x	--	--	--
57-1	X[d]	--	--	--	--	--	--	--	--	--	--	--	--
57-10	X[d]	--	--	--	--	--	--	--	--	--	--	--	--
59760	X	--	x	x	x	x	x[a]	x	x	x	--	--	--
59761	X	--	x	x	x	x	x	x	x	x	--	--	--
59762	X	--	--	--	--	--	--	--	--	--	x	--	--
59763	X	--	x	x	x	x	x	x	x	x[a]	--	--	--
59764	X	--	--	--	--	--	--	--	--	--	--	--	--
59766	X	--	x	x	x	x	x	x	x	x	--	--	--
59768	X[c]	--	--	--	--	--	--	--	--	--	--	--	--
59770	X[c]	--	--	--	--	--	--	--	--	--	--	--	--
59772	X	--	x[a]	x	x	x	x	x	x	x	--	--	--
26-092-915	X	--	--	--	--	--	--	--	--	--	--	--	--
GMW17-31[e]	X[b]	--	--	--	--	--	--	--	--	--	--	--	--
GMW17-32	X[b]	--	--	--	--	--	--	--	--	--	x	x	x
GMW17-33	X[b]	--	--	--	--	--	--	--	--	--	x	--	--
GMW18-34[e]	X[b]	--	--	--	--	--	--	--	--	--	--	--	--
Bishop	X	--	x	x	x[a]	x	x	x	x	x	--	--	--
Equipment, transfer, and trip blanks			x	x	x	x	x	x	x	x	--	--	--
Mercury trip blank			--	x	x	x	x	x	x	x	--	--	--
Cyanide blank			--	--	--	--	x	x	x	--	--	--	--

Notes:

[a]Indicates water quality sample and sample duplicate collected and analyzed

[b]Once constructed, quarterly manual measurements were made

[c]Quarterly water level measurements began Q2 2014

[d]Quarterly water level measurements began Q3 2014

[e]No sampling performed due to dry completions, quarterly water level measurements still taken, since constuction of well GMW17-31 less than a foot of water has risen in the bottom

-- = indicates not performed

Table B2. Baseline Flow and Water Quality Data Collection Inventory for Springs

Baseline Element	2013				2014				2015[c]				2016[c]		2017-2018[C]			
Baseline Spring Location	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q3	Q4	Q1	Q2	Q3	Q4
Government Corral Spring	X	X	X	X	X	X	X[b]	F	F	F	F	F	F	F	F	F	F	F
Sagebrush Spring	X	X	X[b]	X[b]	X	X	X	F	F	F	F	F	F	F	F	F	F	F
Deposit Stock Tank[a]	X	X	X	X	X[b]	X	X	F	F	F	F	F	F	F	F	F	F	F
Twin Springs North	X	X	X	X	X	X	X	F	F	F	F	F	F	F	F	F	F	F
Twin Springs South	X[b]	X	X	X	X	X[b]	X	F	F	F	F	F	F	F	F	F	F	F
Sourdough Spring Upper	X	X	F	X	X	X	X	F	F	F	F	F	F	F	F	F	F	F
Whiskey Spring	X	X[b]	X	X	X	X	X	F	F	F	F	F	F	F	F	F	F	F
Sourdough Spring Lower	F	X	X	X	X	F	F	F	F	F	F	F	F	F	F	F	F	F
Poison Spring	X	X	X	X	X	X	X	F	F	F	F	F	F	F	F	F	F	F
Grassy Spring	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Lowe Spring	X	X	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Equipment, transfer, and trip blanks	--	X	X	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--

Background Spring Location	2013				2014				2015				2016		2017-2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q3	Q4	Q1	Q2	Q3	Q4
Bull Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Central Grassy Mountain Spring	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--
East Grassy Mountain Spring	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--
West Grassy Mountain Spring	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--
Negro Rock Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Negro Rock Canyon Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Oxbow Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Oxyoke Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Red Tank No. 3	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Tank E of Negro Rock	--	F	--	F	--	F	--	--	--	--	--	F	F	F	F	F	F	F
Spring North of Lowe Reservoir	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Spring in Section 13 T22S R44E	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Spring in Section 23 T21S R43E	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--
Spring South of Poison Spring	--	F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
West Whiskey Spring	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--
Wildcat Spring	--	F	--	F	--	F	--	--	--	--	--	--	--	--	--	--	--	--

Flowing Well Locations	2013				2014				2015				2016		2017-2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q3	Q4	Q1	Q2	Q3	Q4
Darky Rock Well		F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Flowing Well		F	--	F	--	F	--	F	--	F	--	F	--	--	--	--	--	--
Prod-1		F	--	F	--	--	--	--	--	--	--	--	F	F	F	F	F	F

Notes:

X = flow and water quality monitoring

F = flow measurement only

[a]Referred to as "Grassy Spring Stock Tank" during Q1 and Q2 2013 events

[b]Indicates duplicate sample collected and analyzed

[c]Flow monitoring only during 2015, 2016, 2017, and 2018 events

-- = not measured

Appendix C
Well Completion Details and Logs

Calico Well ID	OWRD Well Tag Number	OWRD Name	Alternate Name	Drill Method	Depth of First Water (ft)	Well Const. Depth (ft)	Screened Interval (ft)	Well Casing Diameter (in)	TOC Elevation[4]	Elevation Screened Interval (ft)	Water Level Elevation (9/26/2018)	Production (gpm)[2]	Screened Lithology[1]
59760	107462	MALH 2974	Middle Sweizer, TW-1	air rotary	160	203	163-203	6	3762.1	3599-3559	3673.43	+10	fractured basalt
59761	109400	MALH 2993	Lower Sweizer, MW-2	air rotary	100	118	97-117	4	3762.2	3665-3645	3673.48	+50	fractured basalt
59762	109371	MALH 2976, 2985	MW-3	air rotary	626	700	550-660	4	3724.8	3175-3065	3103.4	<1	siltstone
59763	109356	MALH 2994	TW-4	air rotary	277	323	293-323	6	3519.4	3226-3196	3239.03	+5	fractured volcanics
59764	107466	MALH 2986	MW-5	air rotary	270	300	279-299	4	3511.9	3233-3213	3238.24	+10	fractured sandstone
59765		MALH 2979	MW-6	air rotary	29	36	28-36	4	3446.5	3418-3410	dry	dry	shallow sandstone
59766	107468	MALH 2980	MWS-8	air rotary	only damp when drilled	45	25-45	4	3459.7	3435-3415	3426.68	+10	shallow sandstone
59767		MALH 2995	MWS-9	air rotary	dry	40	20-40	4	3495.3	3475-3455	dry	dry	shallow sandstone
59768		MALH 54197	MWS-10	air rotary	21	25	10-25	4	3480.6	3471-3456	3463.46	0.5	shallow sandstone
59770		MALH 2983	MW-11	air rotary	dry when drilled	424	374-424	4	3389.0	3015-2965	3241.71	+0.5	volcanic tuff
59772	109352	MALH 2984	Upper Sweizer, MWS-13	air rotary	125	207	165-205	4	3768.2	3603-3563	3673.5	+50	fractured basalt
26-092-915	109354	MALH 54071		unknown	unknown	915	228-268	2	3710.0	3482-3442	3633.55	unk	unk
57-1		MALH 54195		unknown	unknown	765	108-138	1.25	3770.6	3663-3633	3699.1	unk	unk
57-10		MALH 54196		unknown	unknown	500	126-156	1	3681.1	3555-3525	3635.67	unk	unk
89-2	109360	MALH 54072		unknown	200	425	386-406	2	3293.5	2907-2887	3235.54	unk	unk
Bishop	None	MALH 54046	Rye Field	cable	unknown	482	135-145	12	3391.5	3257-3247	3281	50	coarse gravel
BLM	109398	MALH 2277	Owyhee Ridge	cable	unknown	175	159-166	6	3579.6	3421-3414	3423.95	+12	white sand
GMW17-31	125168	MALH 54404		air rotary	dry when drilled	498	458-498	5	3722.0	3262-3222	3222.6	0	siltstone, sinter, clay
GMW17-32	125169	MALH 54405		air rotary	244	718	678-718	5	3702.1	3026-2986	3082.1	<1	Arkose, siltstone, Clay
GMW17-33	125170	MALH 54406		air rotary	243	338	238-338	5	3702.7	3465-3365	3452.16	<30	sinter, siltstone, tuff
GMW18-34	130031	MALH 54437		air rotary	dry	950	830-890	5	3953.3	3127-3067	dry	dry	Arkose, siltstone, Clay
GW-1	107469	MALH 2281	47-1	air rotary	140	155.5	135.5-155.5	4	3709.1	3573.5-3553.5	3654.18	60	gravel
GW-2	109357	MALH 2279	47-2	air rotary	dry when drilled	325	290-320	4	3827.5	3537-3507	3662.91	0	blue and grey clay
GW-3	107467	MALH 2278	47-3	air rotary	dry when drilled	350	320-350	4	3633.6	3314-3284	3401.68	<1	blue and grey clay
GW-3A		MALH 2579		air rotary	dry	420	380-420	2	3655	3275-3235	dry	dry	silt and clay
GW-3B		MALH 2576		air rotary	dry	340	80-100	2	3626	3546-3526	dry	dry	clay
GW-4	107460	MALH 54073		unknown	50	370	280-350	4	3342.7	3063-2993	3260.85	100	sandstone, congl, clay
GW-5		MALH 54194		air rotary	unknown	265	204-224	2	3413.0	3209-3189	3221.45	<1	tuff, clay
GW-6	109368	MALH 2578		air rotary	145	340	300-340	2	3377.3	3077-3037	3236.16	3-4	sandstone, congl, clay
Prod 1	107457	MALH 2275, 2511		air rotary	145	425	145-255, 325-355, 380-420	6	3436.4	3291-3181, 3111-3081, 3056-3016	3436.41	30-100[3]	sandstone, blue clay, and hard sandstone
PW-1	109353	MALH 2276		air rotary	320	520	320-340, 400-420	6	3709.1	3389-3369, 3309-3289	3654.66	25-35[3]	brown clay and sand; coarse sandstone
PW-4	109351	MALH 2206		air rotary	280	375	280-300, 340-360	6	3341.4	3061-3041, 3001-2981	3261.39	175-250[3]	sandstone and conglomerate

1 - as reported on the drillers log
2 - based on short-term testing by driller during or following construction
3 - based on long-term test pumping
4 - surveyed with the exception of GW-3A, GW-3, GMW-17-31, GMW17-32, GMW17-33, and GMW18-34

Table C1. Well Completion Details

Attachment C2. Well Logs

MALH 2974 RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/44E/8dd

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59760

(1) OWNER/PROJECT:

WELL NO. TW-1

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

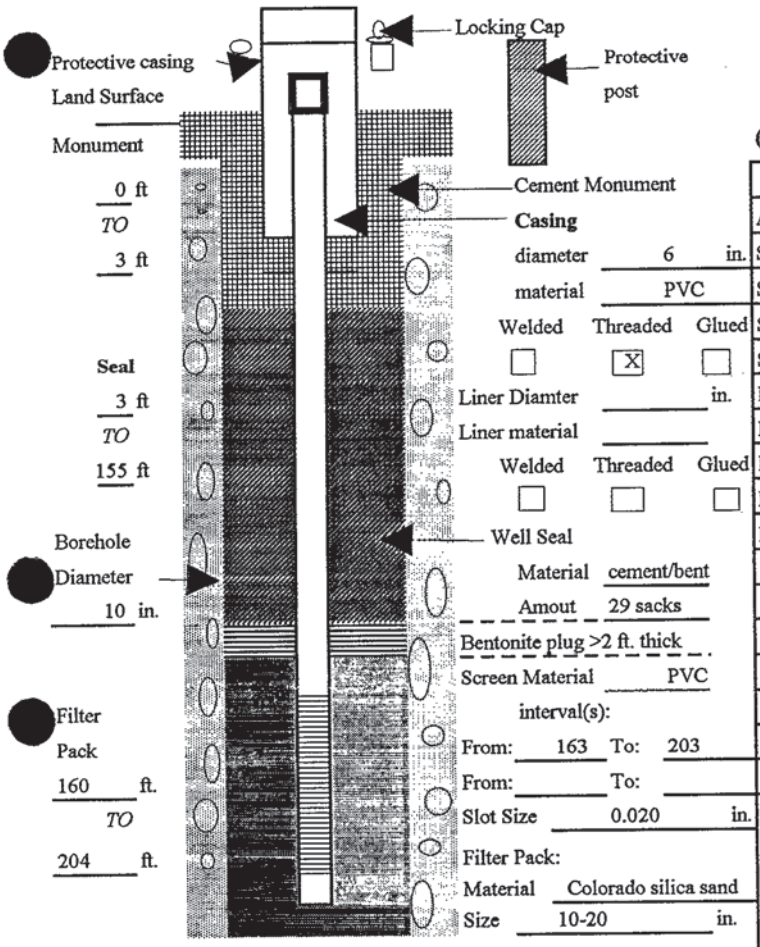
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 203 ft.

59760 / MALH 2974, 2991



Casing
diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]

Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]

Well Seal
Material cement/bent
Amout 29 sacks
Bentonite plug >2 ft. thick

Screen Material PVC
interval(s):
From: 163 To: 203
From: To:
Slot Size 0.020 in.

Filter Pack:
Material Colorado silica sand
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield 45 GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. NW 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN, VALE, OR
3. Tax lot number of well location UNKNOWN
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Feet below land surface. Date October 11, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

RECEIVED FEB 4 1994 WATER RESOURCES DEPT. SALEM, OREGON

Depth at which was first found

From	To	Estimated Flow Rate	SWL
160	205	45-50	88

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Alluvial silt with basalt float	0	11	
Siltstone, brown, with basalt pebbles	11	15	
Siltstone, Brown	15	40	
Siltstone, Brown, with basalt cobbles	40	65	
Siltstone, brown w/ increasing basalt	65	90	
Basalt, Red with 40% brown siltstone	90	109	
Basalt, Red and Black, vesicular, fine grained	109	160	
Basalt, vesicular w/clay in vesicles	160	185	
Basalt w/increased oxidation	185	200	
Basalt w/20% clays	200	205	

Date Started October 4, 1993 Completed October 11, 1993

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10096
Signed [signature] Date 1-12-94

2991 Malh

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0)

JAN 26 1994

WATER RESOURCES DEPT.
SALEM, OREGON

22S/44E/8db

Start Card # 59760

(1) OWNER/PROJECT:

WELL NO. TW-1

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

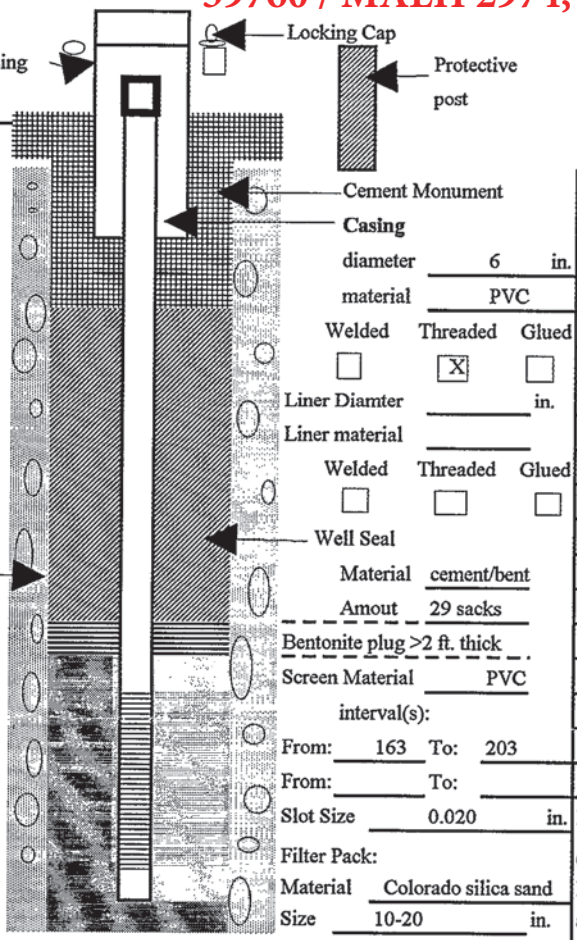
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth completed well 203 ft.

59760 / MALH 2974, 2991



Casing diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]

Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]

Material cement/bent
Amout 29 sacks
Bentonite plug >2 ft. thick

Screen Material PVC
interval(s):
From: 163 To: 203
From: To:
Slot Size 0.020 in.

Filter Pack:
Material Colorado silica sand
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield 45 GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. NW 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN, VALE, OR
3. Tax lot number of well location UNKNOWN
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Feet below land surface. Date October 11, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL
160	205	45-50	88

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Alluvial silt with basalt float	0	11	
Siltstone, brown, with basalt pebbles	11	15	
Siltstone, Brown	15	40	
Siltstone, Brown, with basalt cobbles	40	65	
Siltstone, brown w/ increasing basalt	65	90	
Basalt, Red with 40% brown siltstone	90	109	
Basalt, Red and Black, vesicular, fine grained	109	160	
Basalt, vesicular w/clay in vesicles	160	185	
Basalt w/increased oxidation	185	200	
Basalt w/20% clays	200	205	

RECEIVED
MAR 14 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Date Started October 4, 1993 Completed October 11, 1993

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10096
Signed [signature] Date 1-12-94

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-085)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2993

22S/44E/8aa

Start Card # 59761

9

(1) OWNER/PROJECT:

WELL NO. MW-2

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

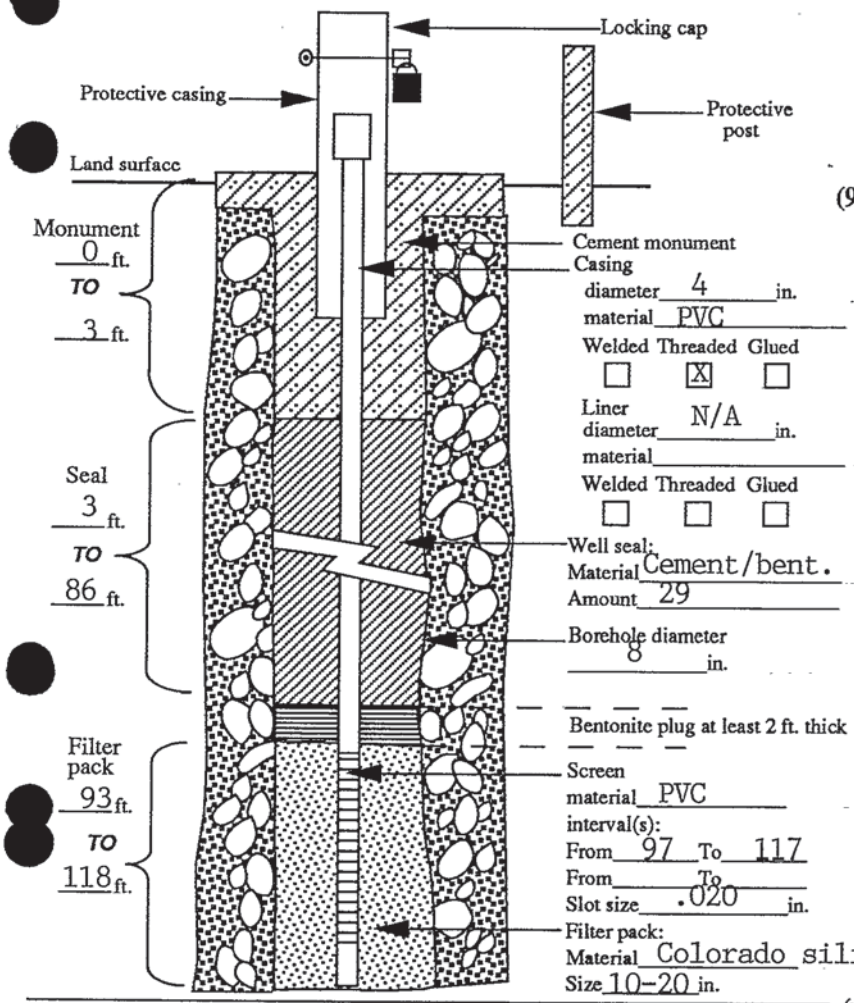
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

59761 / MALH 2993

Special Standards Yes [ ] No [X]
Depth of completed well 118 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability — Yield — GPM
Conductivity — PH —
Temperature of water 56 °F/C Depth artesian flow found — ft.
Was water analysis done? [ ] Yes [ ] No
By whom? —
Depth of strata to be analyzed. From — ft. to — ft.
Remarks: —

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur
Township 22 (N or S) Range 44E (E or W) Section 8
1. NE 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Ft. below land surface. Date 10/04/93
Artesian Pressure — lb/sq. in. Date —

(8) WATER BEARING ZONES:

Depth at which water was first found 100

From	To	Est. Flow Rate	SWL
100	120	60	88

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Aluvian silt & cobbles	0	13	
Clayey siltstone brn	13	15	
Siltstone brown	15	36	
Clayey siltstone brn	36	65	
Siltstone with basalt	65	70	
Basalt with some	70		
siltstone		72.5	
Basalt	72.5	80	
Basalt with some	80		
calcite filling			
vesicles		92	
Basalt with fractures	92	105	
Basalt with clay seams	105	120	

Date started 10/02/93 Completed 10/04/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 1098 Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10046 Date 1/12/94

OWNER: NEWMONT Gold

PROJECT: GRASSY MOUNTAIN

59761 / MALH 2993

LOCATION: NE.NE SECT 8, T-22, R-44-EAST PIT AREA - SWITZER RES

COORDINATES N. _____ E. _____ ELEV. _____

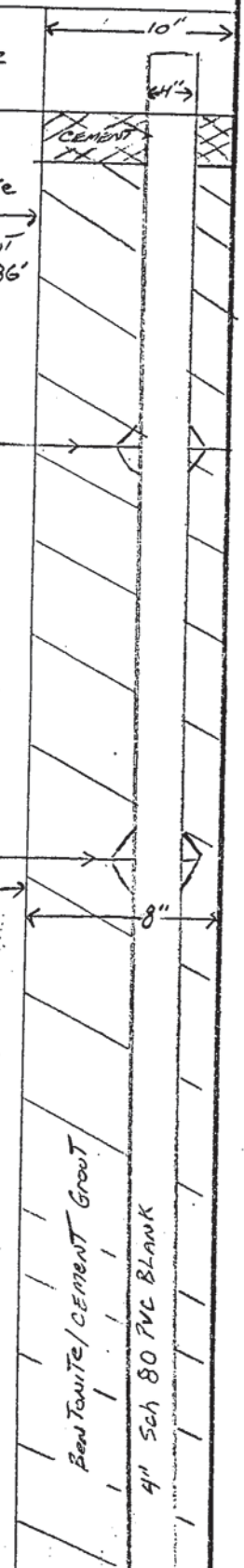
BORING NO. MW-2

TYPE OF DRILLING: AIR ROTERY

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 3

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
									3' RISER
		Alluvium							4% Bentonite to 96% CEMENT Grout From 3' to 86'
15		Clayey siltstone - Brown							13' - Dry
		Siltstone, Brown							15' Centralizer @ 18' - Damp @ 20'
20									
25									
30									
35									
		Clayey siltstone, Brown							36' - Dry
40									Centralizer @ 46'
45									10" Borehole to 43'-8" Bore hole to 120'
50									
55									
60									
65									
		Siltstone w/Basalt							65' - Dry
70		Basalt w/some siltstone							70' - Drill
75		Basalt	Vesicular Top of Flow?						72.5'
80									



XW HW MM SW FR VW W MS S VS

* NOTE: PVC CASING IS LOCATED IN CENTER OF BORE HOLE

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER: NEWMONT Gold

PROJECT: Grassy Mountain

LOCATION: NE.NE, Sec 8, T22, R44 - East Pit Area - Switzer Res

COORDINATES N. _____ E. _____ ELEV. _____

59761 / MALH 2993

BORING NO. MW-2

TYPE OF DRILLING: Air Rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 3 OF 3

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	ROD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
85		BASALT w/some CALCITE FILLING VESICLES	SWL @ 88.0						4% BENTONITE 96% CEMENT From 3' to 86'
90									BENTONITE PLUG From 86' to 93'
95		BASALT	FRACTURES @ 93						SILICA SAND From 93' to 118'
100			Water @ 100'						CENTRALIZER @ 96'
105			25 gpm @ 105'						105'
110		BASALT w/INTERSTIAL CLAY	60 gpm @ 110'						CENTRALIZER @ 116'
115									1' SAND PACK From 117' to 118'
120			60 gpm @ 120'						NATIVE MATERIALS CAVE IN @ 118'
		130 H							130 H

8"

4"

BENTONITE CEMENT GROUT

BENTONITE PELLETS PLUG

SCH 80 PVC BLANK 4"

10-20 COLORADO SILICA SAND

0.02 SCH 80 PVC SCREEN 4"

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

JAN 18 1994
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2976

22S / 44E / 8bd

Start Card # 59762

(1) OWNER/PROJECT:

WELL NO. MW-3

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

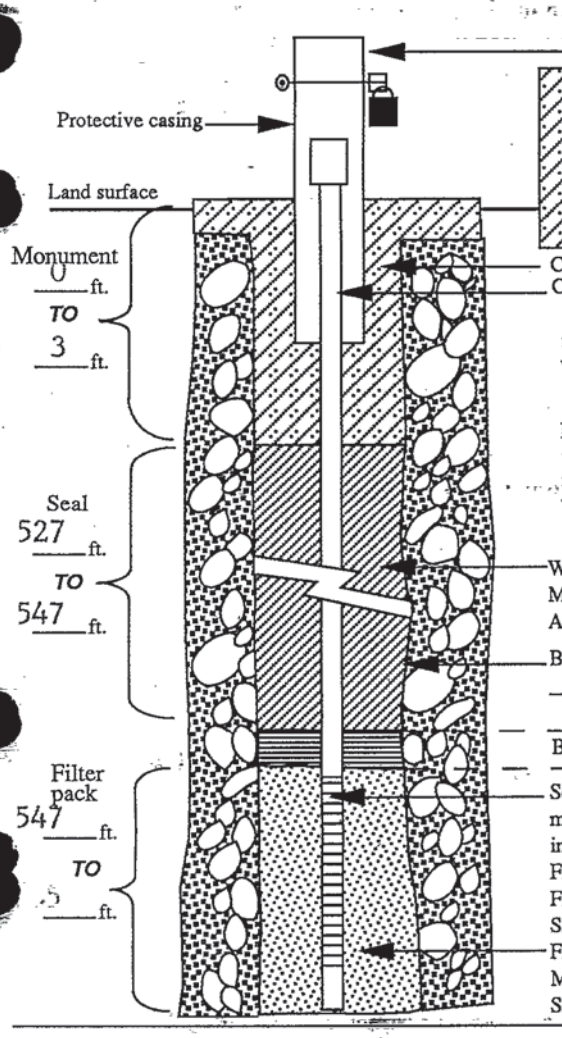
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

59762 / MALH 2976

Special Standards Yes [ ] No [X]
Depth of completed well 657.5 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability ____ Yield ____ GPM
Conductivity ____ PH ____
Temperature of water 56 °F/C Depth artesian flow found ____ ft.
Was water analysis done? [ ] Yes [X] No
By whom? ____
Depth of strata to be analyzed. From 0 ft. to ____ ft.
Remarks: See attached sheet for sand pack

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur
Township 22S (N or S) Range 44E (E or W) Section 8
1. SE 1/4 of NW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

626 Ft. below land surface. Date 10/29/93
Artesian Pressure ____ lb/sq. in. Date ____

(8) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation ____

Material	From	To	SWL
****See Attached Sheet*******			

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started 10/16/93 Completed 10/29/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10098 Date 1/13/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-13-94

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SPF 15-1

59763 / MALH 2994

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59763

(1) OWNER/PROJECT:

WELL NO. TW-4

Name Newmont Gold

Address 316 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

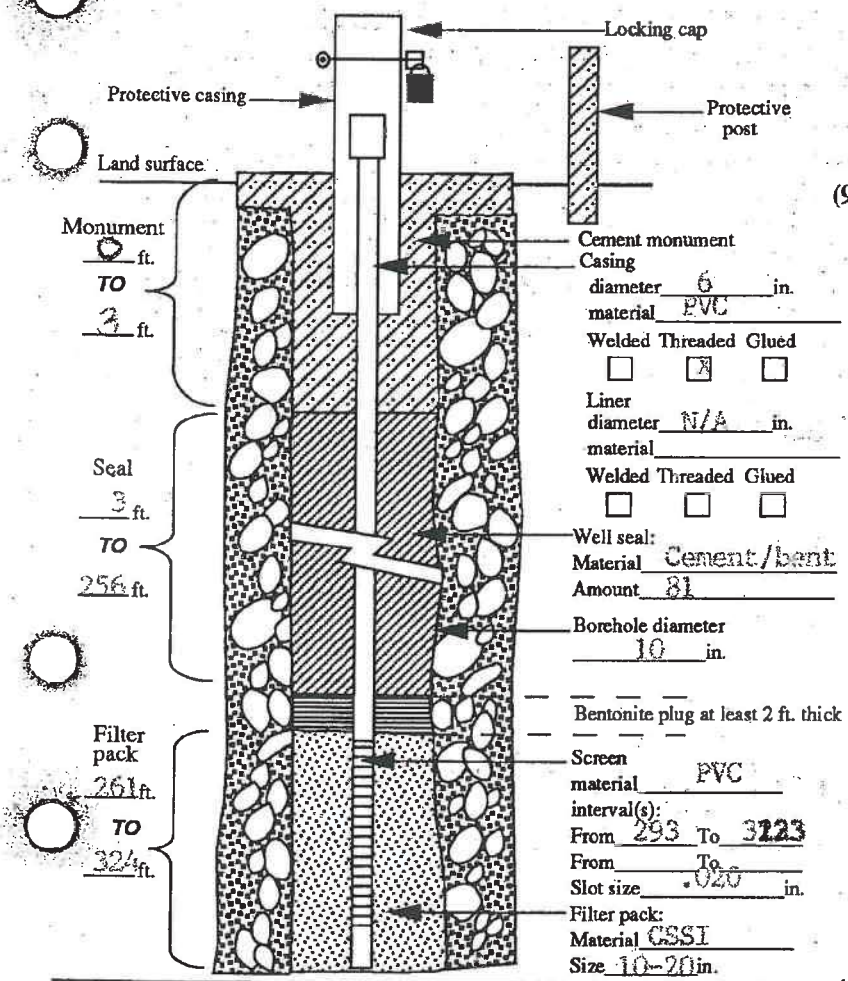
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth of completed well 324 ft.



Cement monument
Casing
diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner
diameter N/A in.
material
Welded [ ] Threaded [ ] Glued [ ]
Well seal:
Material Cement/bent
Amount 81
Borehole diameter
10 in.
Bentonite plug at least 2 ft. thick
Screen
material PVC
interval(s):
From 293 To 323
From To
Slot size .020 in.
Filter pack:
Material CSSI
Size 10-20 in.

(5) WELL TEST: N/A

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Permeability Yield GPM

Conductivity PH

Temperature of water 50 °F/C Depth artesian flow found ft.

Was water analysis done? [ ] Yes [ ] No

By whom?

Depth of strata to be analyzed. From ft. to ft.

Remarks:

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22S (N or S) Range 44E (E or W) Section 7

1. SW 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

280 Ft. below land surface. Date 10/15/93

Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Alluvium	0	3	
Light brown tuff	3	18	
Clayey siltstone tuff	18	43	
Tuff and Rhyolite	43	163	
Gray tuff	163	215	
Gray tuff and Rhyolite	215	305	277
Rhyolite	305	324	

Date started 10/11/93 Completed 10/15/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10298 Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-12-94

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

SPF 15-2

59764 / MALH 2986

Start Card # 59764

(1) OWNER/PROJECT:

WELL NO. MW-5

Name Newmont Gold

Address 316 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

- [X] New construction
- [ ] Repair
- [ ] Recondition
- [ ] Conversion
- [ ] Deepening
- [ ] Abandonment

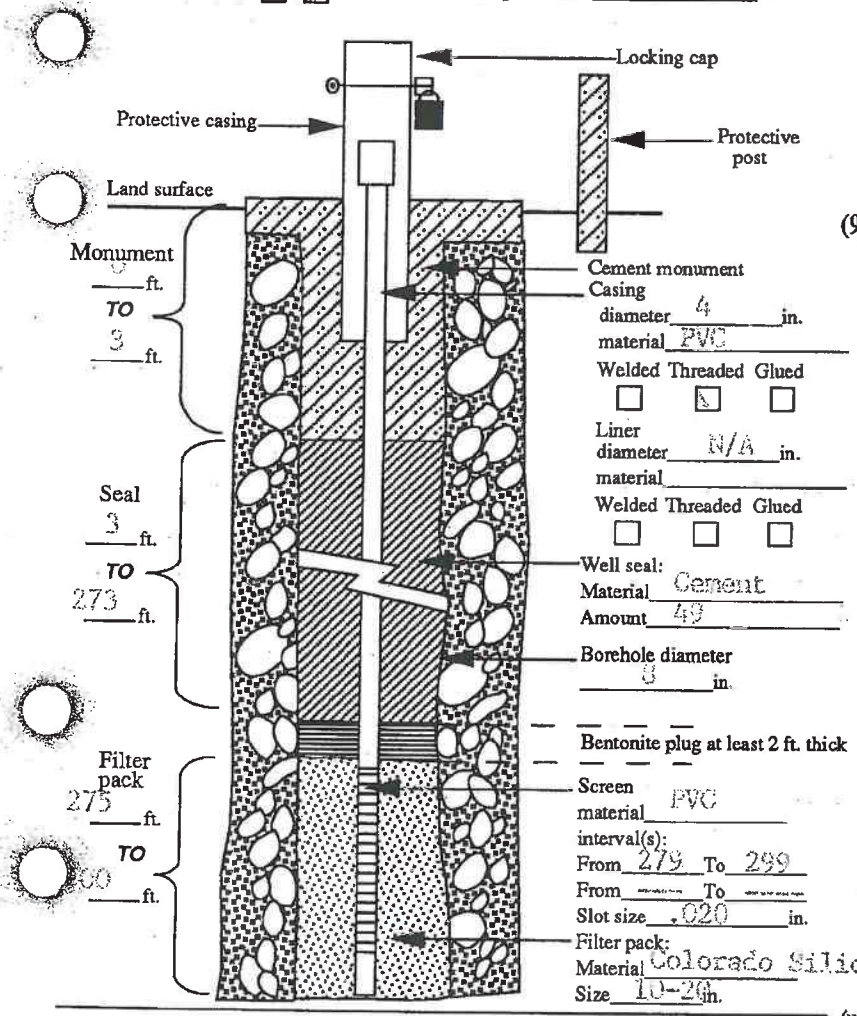
(3) DRILLING METHOD

- [X] Rotary Air
- [ ] Rotary Mud
- [ ] Cable
- [ ] Hollow Stem Auger
- [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth of completed well 300 ft.



(5) WELL TEST:

- [ ] Pump
- [ ] Bailer
- [X] Air
- [ ] Flowing Artesian

Permeability ____ Yield ____ GPM

Conductivity ____ PH ____

Temperature of water 56 °F/C Depth artesian flow found ____ ft.

Was water analysis done? [ ] Yes [X] No

By whom? ____

Depth of strata to be analyzed. From ____ ft. to ____ ft.

Remarks: ____

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22 S (N or S) Range 44 E (E or W) Section 7

1. SW 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

270 Ft. below land surface. Date 10/11/93

Artesian Pressure ____ lb/sq. in. Date ____

(8) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation ____

Material	From	To	SWL
****See Attached Sheet*******			

Date started 10/4/93 Completed 10/11/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed ____ MWC Number 1425

Date ____

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed ____ MWC Number 1096

Date 1-13-94

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59764 / MALH 2986

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59764

(9) WELL LOG

Material	From	To	SWL
Aluvium Culluviam sandstone gravels with rhyolite boulders & cobbles	0	7	
Rhyolite tuff tan gray red	7	17	
Rhyolite with some clay matrix/possible fracture	17	22	
Rhyolite red/tan/gray	22	45	
Yellow/tan/gray rhyolite with greyish clay	45	50	
Rhyolite	50	85	
Rhyolite yellow sandstone tan gray	85	91	
Sandstone tan gray friable medium grained	91	96	
Rhyolite pink/tan/gray	96	116	
Basalt	116	117	
Rhyolite yellow/tan silicified	117	120	
Rhyolite tan pink gray clay rock chips	120	130	
Rhyolite tan green	130	152	
Basalt forest green chlor ? dike	152	155	
Green sandstone	155	160	
Rhyolite clay gray tan	160	167	
Rhyolite tan/pink/gray	167	170	
Life gray clay all rhyolite	170	187	
Rhyolite green/tan/red	187	190	
Gray clay	190	211	
Basalt blue gray	211	213	
Clay green gray	213	215	
Rhyolite red/tan/gray flow banding	215	220	
Clay gray green	220	230	
Weathered rhyolite medium green gray	230	237	
Hard to medium gray alt rhyolite	237	240	
Green alt rhyolite dolomite	240	248	
Clay lite green	248	255	
Clay brown gray	255	262	
Siltstone grayish green with rhyolite	262	275	
Clay yellow	275	281	
Clay gray	281	282.5	
Sandstone yellow with red rhyolite	282.5	296	
Sandstone silicified pale yellow white	296	303	
Sandstone white	303	305	

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59762 / MALH 2976, 2985

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59762

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FEB 4 1994
WATER RESOURCES DEPT.
SALEM, OREGON

(9) Well Log

Material	From	To	SWL
Alluvium sand and cobbles	0	1	
Arkose sandstone buff medium grained course	1	19	
Sandstone orange to buff gray green course to medium grained	19	25	
Sandstone olive green medium grained	25	36	
Sandstone orange to red medium grained to fine	36	42	
Sandy clayey siltstone pink purple/yellow streaks	42	57	
Clayey siltstone light olive green and tan	57	78	
Claystone orange light purple yellow	78	94	
Silicified tan buff and brown	94	109	
Silty claystone purple gray and yellow	109	115	
Clayey siltstone gray/pink/yellow	115	160	
Clayey siltstone orange/yellow/gray	160	178	
Clayey siltstone gray	178	180	
Clayey siltstone tan and gray partial silicification	180	187	
Clayey siltstone tan grading into gray decrease in silicificaiton	187	215	
Clayey siltstone gray grading into tan increaded silicification	215	220	
Clayey siltstone highly silicified tan to brown	220	256	
Clayey siltstone tan grading into gray decreasing silicification from high to moderate	256	305	
Clayey siltstone gray grading into tan increasing silicification	305	312	
Silicified siltstone tan to light brown	312	332	
Clayey siltstone tan to gray	332	345	
Clayey siltstone gray grading into tan with increasing silicification	345	355	
Clayey siltstone tan	355	360	
Clayey siltstone green and brown	360	385	
Clayey siltstone gray and brown	385	401	
Clayey siltstone grey with brown and charcoal mottling	401	435	
" gray	435	501	
Clayey siltstone gray	501	515	
Clayey siltstone charcoal	515	525	
Clayey siltstone gray	525	570	
Clayey siltstone gray charcoal	570	625	
Clayey siltstone gray	625	650	
Silicified siltstone gray	650	700	

Hole was bridging partial sand pack and native materials from 611-635
Native material around screen at 635 - 657

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OR 690-240-095)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2985 22S/44E/8bd Start Card # 59762

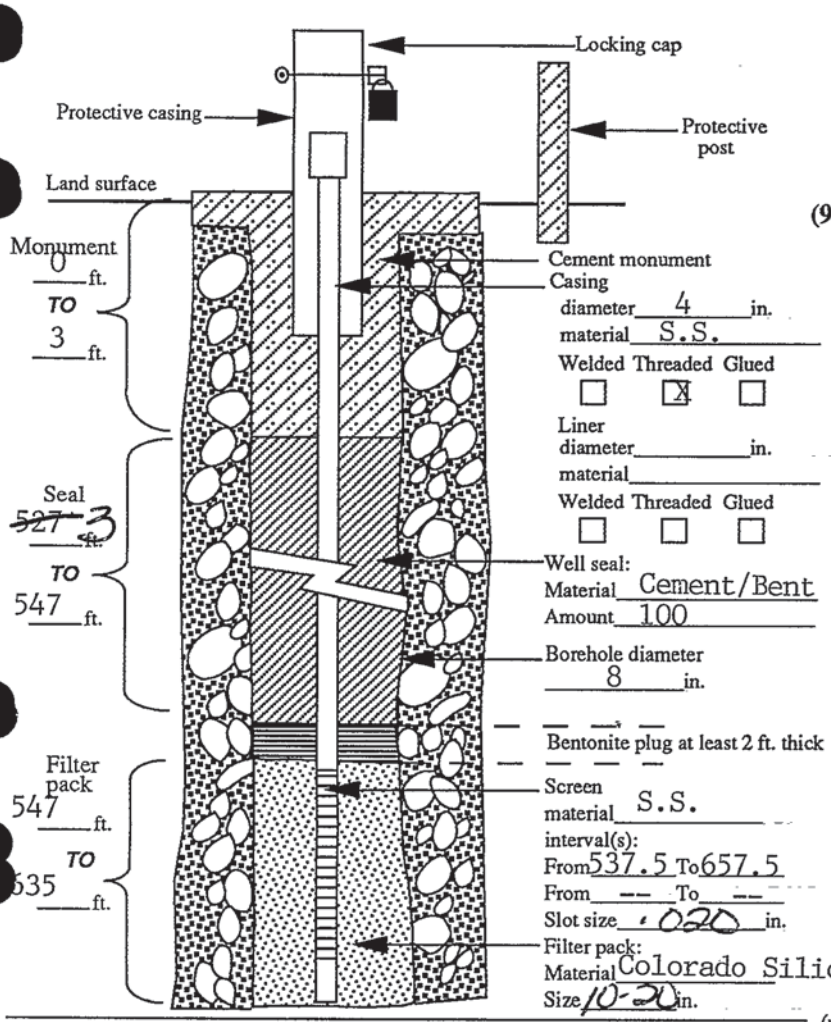
9

(1) OWNER/PROJECT:
WELL NO. MW-3
Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION 59762 / MALH 2976, 2985
Special Standards Yes [ ] No [X] Depth of completed well 657.5 ft.



(5) WELL TEST:
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability ---- Yield ----- GPM
Conductivity ---- PH -----
Temperature of water 56 °F/C Depth artesian flow found --- ft.
Was water analysis done? [ ] Yes [X] No
By whom? ----
Depth of strata to be analyzed. From ----- ft. to ----- ft.
Remarks: See attached sheet for sand pack

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description
Well Location: County Malheur
Township 22S (N or S) Range 44E (E or W) Section 8
1. SE 1/4 of NW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:
626 Ft. below land surface. Date 10/29/93
Artesian Pressure ____ lb/sq. in. Date

(8) WATER BEARING ZONES:
Depth at which water was first found ------

From	To	Est. Flow Rate	SWL

(9) WELL LOG:
Ground elevation

Material	From	To	SWL
****See Attached Sheet*******			

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MAR 14 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 10/16/93 Completed 10/29/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Signed [signature] MWC Number 1098 Date 1/13/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed [signature] MWC Number 10096 Date 1-13-94

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59762 / MALH 2976, 2985

RECEIVED
JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

RECEIVED
MAR 14 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59762

(9) Well Log

Material	From	To	SWL
Alluvium sand and cobbles	0	1	
Arkose sandstone buff medium grained course	1	19	
Sandstone orange to buff gray green course to medium grained	19	25	
Sandstone olive green medium grained	25	36	
Sandstone orange to red medium grained to fine	36	42	
Sandy clayey siltstone pink purple/yellow streaks	42	57	
Clayey siltstone light olive green and tan	57	78	
Claystone orange light purple yellow	78	94	
Silicified tan buff and brown	94	109	
Silty claystone purple gray and yellow	109	115	
Clayey siltstone gray/pink/yellow	115	160	
Clayey siltstone orange/yellow/gray	160	178	
Clayey siltstone gray	178	180	
Clayey siltstone tan and gray partial silicification	180	187	
Clayey siltstone tan grading into gray decrease in silicificaiton	187	215	
Clayey siltstone gray grading into tan increaded silicification	215	220	
Clayey siltstone highly silicified tan to brown	220	256	
Clayey siltstone tan grading into gray decreasing silicification from high to moderate	256	305	
Clayey siltstone gray grading into tan increasing silicification	305	312	
Silicified siltstone tan to light brown	312	332	
Clayey siltstone tan to gray	332	345	
Clayey siltstone gray grading into tan with increasing silicification	345	355	
Clayey siltstone tan	355	360	
Clayey siltstone green and brown	360	385	
Clayey siltstone gray and brown	385	401	
Clayey siltstone grey with brown and charcoal mottling	401	435	
" gray	435	501	
Clayey siltstone gray	501	515	
Clayey siltstone charcoal	515	525	
Clayey siltstone gray	525	570	
Clayey siltstone gray charcoal	570	625	
Clayey siltstone gray	625	650	
Silicified siltstone gray	650	700	

Hole was bridging partial sand pack and native materials from 611-635
Native material around screen at 635 - 657

OWNER : Newmont Gold

PROJECT : Grassy Mtn

59764 / MALH 2986

LOCATION : ~~Grassy~~ Mtn (Grabgrass Dit area)

COORDINATES N. _____ E. _____ ELEV. _____

BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 1 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #
	5		Alluvium/colluvium sandstone grands w/ Rhyolitic boulders and cobbles.	Dry						MW-5 (5)
	10		Rhyolite, rhyolitic tuff tan, gray red w/ flow banding and biotite phenocrysts some yellowish chalcid	Dry ↓ add water						(10)
	15									(15)
	17		Rhyolite w/ some clay in matrix, possible fracture or rubble zone	fracture zone (?) clay present						
	20									(20)
	22		Rhyolite, red, tan, gray	@28' discont. cyclone due to poor recovery of sample						(25)
	30									(30)
										(35)
	40			No sample Recovery						No sample taken (40)
			yellow, tan gray Rhyolite w/ grayish clay							(45)
	50									(50)
			Rhyolite	No sample recovery clown out around collar						No sample (55)
	60									(60)
										(65)
	70									(70)
										(75)
	80									(80)

3'

centralizer

centralizer

XW HW MM SW FR

VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER: Newmont Gold

PROJECT: Grassy Mtn

59764 / MALH 2986

LOCATION: Near cut grass pits

COORDINATES N. _____ E. _____ ELEV. _____

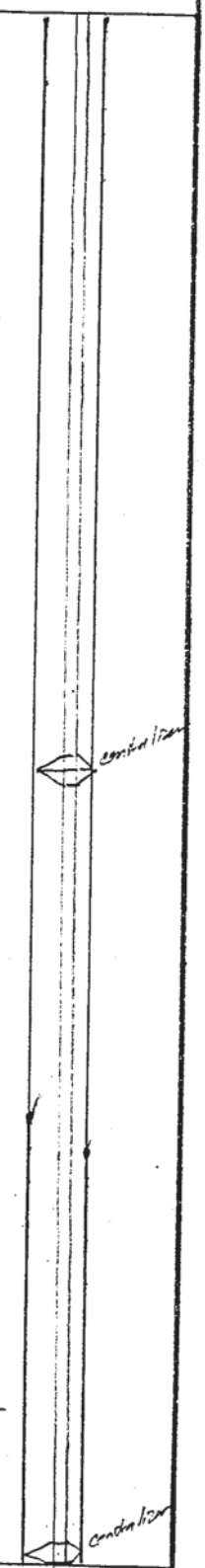
BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip Sample #
80			Rhyolite, tan, gray, red	Poor sample recovery						MW-5 (85)
			Rhyolite w/ 5% yellow chalcedony							(90)
90			Sandstone - tan gray friable medium grained	good sample recovery dry						(95)
			Rhyolite pink, tan, gray w/ some sand medium to pieces, no flow	dry w						(100)
100			banding observed	Add water for drilling						(105)
110										(110)
										(115)
			basalt dike							
			Rhyolite yellow, tan silicified							(120)
120			Rhyolite, tan, pink, gray	gray clay w/ rock chips						(125)
130			Rhyolite lt. tan-green	silicified rhyolite w/ chalcedony white - yellow						(130)
										(135)
140										(140)
										(145)
150										(150)
52			Alt. basalt forest green chloritic - dike	green chloritic alt. basalt (?) w/ 1-2% pyrite						
54			green sandstone							(155)
160										(160)



LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

OWNER: Newmont Gold

PROJECT: Grassy Mtn

59764 / MALH 2986

LOCATION: [redacted] Crab [redacted] pits [redacted]

COORDINATES N. _____ E. _____ ELEV. _____

BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 3 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #
100			Rhyolite clay - gray tan	Rhyolite						MW-5 (165)
			Rhyolite - tan pink gray							
170			lt. gray clay alt. Rhyolite							(170)
										(175)
180										(180)
										(185)
			Rhyolite green, tan, clay red alt w/ zones of	Some water ≤ 1g/m						
190			gray clay clay	produced from the alternating clay rock zones						(190)
										(195)
200			green alt.							(200)
										(205)
			clay gray							
210			basalt blue gray							(210)
			clay green-gray							(215)
			Rhyolite mixed colors rd, tan, gray w/ flow banding							
220										(220)
			clay gray green							(225)
230										(230)
			med green-gray covered Rhyolite	alt. chlorite w/ fresh biotite						(235)
240			clay lt-med gray alt Rhyolite							(240)

centralizer

centralizer

XW HW MM SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER: Newmont Gold

PROJECT: Grassy Mtn

59764 / MALH 2986

LOCATION: [redacted] Graybgrass pits [redacted]

COORDINATES N. _____ E. _____ ELEV. _____

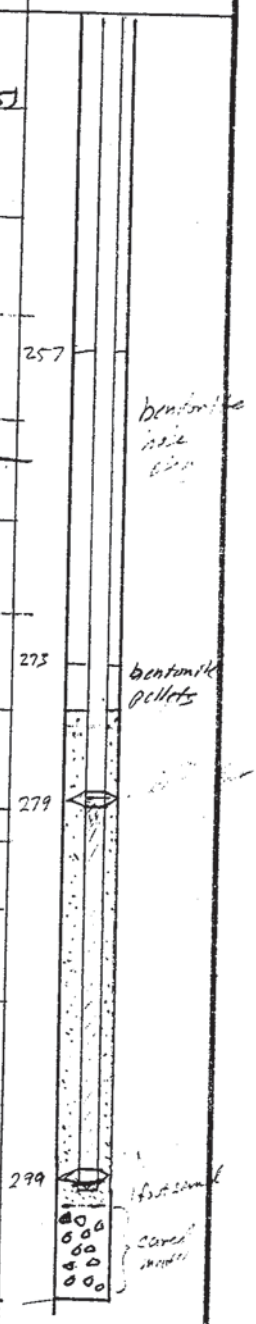
BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 4 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock Chip sample #
240			green alt Rhyolite chlorite	Rhyolite						MW-5 (245)
			clay - lt. green							
250										(250)
			brown gray clay							(255)
260										(260)
			grayish green Siltstone (sandy) w/ rhyolite, possible contamination	No alteration of rocks						(265)
270										(270)
			yellow clay							275
280			grayish @ 81'							280
			yellow sandstone w/ red rhyolite no alteration and flow banding	Rhyolite						285
290										290
										295
			Silicified sandstone pale yellow - white	brown colored water						
300				yellow-gray water						300
			White Sandstone							305
			TD 305'							
310										
320										



20.25 screen 0.4 plug

LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

SPF 16-1

59765 / MALH 2979

Start Card # 59765

(1) OWNER/PROJECT:

WELL NO. MW-6

Name Newmont Gold

Address 318 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

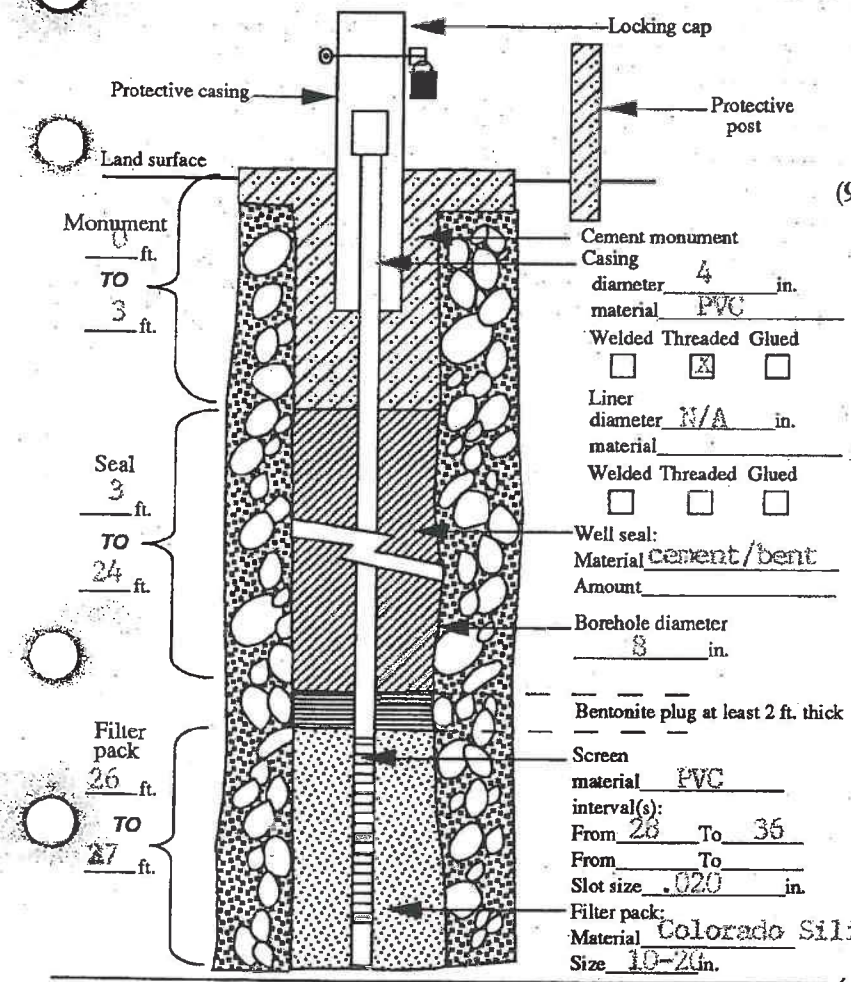
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth of completed well 36 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Permeability — Yield — GPM

Conductivity — PH —

Temperature of water Dry °F/C Depth artesian flow found — ft.

Was water analysis done? [ ] Yes [X] No

By whom? —

Depth of strata to be analyzed. From — ft. to — ft.

Remarks: Wet but no measurable water

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22S (N or S) Range 44E (E or W) Section 6

1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

23 Ft. below land surface. Date 10/04/93

Artesian Pressure — lb/sq. in. Date —

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Soil	0	2	
Sandy siltstone medium	2		
tan brown		5	
Silty sandstone medium	5		
brown silt green			
tinge friable		20	
Sandstone silty olive	20		
brown		26.5	
Clayey sandstone med.	26.5		
gray brown		29	
Sandstone medium gray	29		
brown		35	
Siltstone dark gray	35	36	
Clayey siltstone med	36		
dark gray		37	

Date started 10/03/93 Completed 10/04/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 1078 Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 1078 Date 1-12-94

59765 / MALH 2979

OWNER : Newmont Gold

PROJECT : Grassy Mtn

BORING NO. MW-6

LOCATION :

COORDINATES N. E. ELEV.

PAGE 1 OF 2

ELEVATION DEPTH	GRAPHIC LOG	SOIL CLASSIFICATION	SAMPLES	STANDARD PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DESCRIPTION OF SOILS
2			MW-6 (5)			Sandy loam, tan brown very thin, on bedrock @ 2'
						see page 2 of for rock descr

LOG OF BORING

OWNER : Newmont Gold 59765 / MALH 2979

PROJECT : G[redacted] Mtn [redacted]

LOCATION :

COORDINATES N. _____ E. _____ ELEV. _____

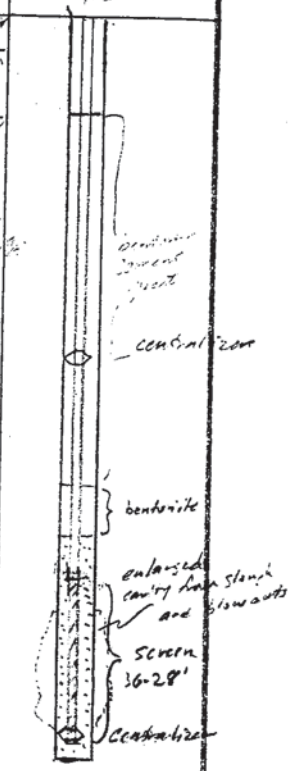
BORING NO. MW-6

TYPE OF DRILLING: Rotary air

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 2

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS ~~and moisture~~	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock Chip Sample #
			Soil							
			Sandy siltstone, medium tan-brown							MW-6 (5)
			Silty sandstone, medium brown w/ slt. green tinge friable	@5' start becoming slty damp						
10				slt. damp						MW-6 (10)
				slt. damp						MW-6 (15)
20			sandstone (silty), olive brown	slt. damp						MW-6 (20)
	26.5									MW-6 (25)
	29.0		clayey sandstone med gray brown	slt. damp						
30			Sandstone, med. grained gray brown	drilling wet						MW-6 (30)
	35									MW-6 (35)
	36		Siltstone - dk gray							
	TD. 37.1'		clayey siltstone med dk gray							
40										
50										
60										
70										



TD 37.1'

LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

SPF 16.2

59766 / MALH 2980

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59766

(1) OWNER/PROJECT:

WELL NO. MWS-8

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

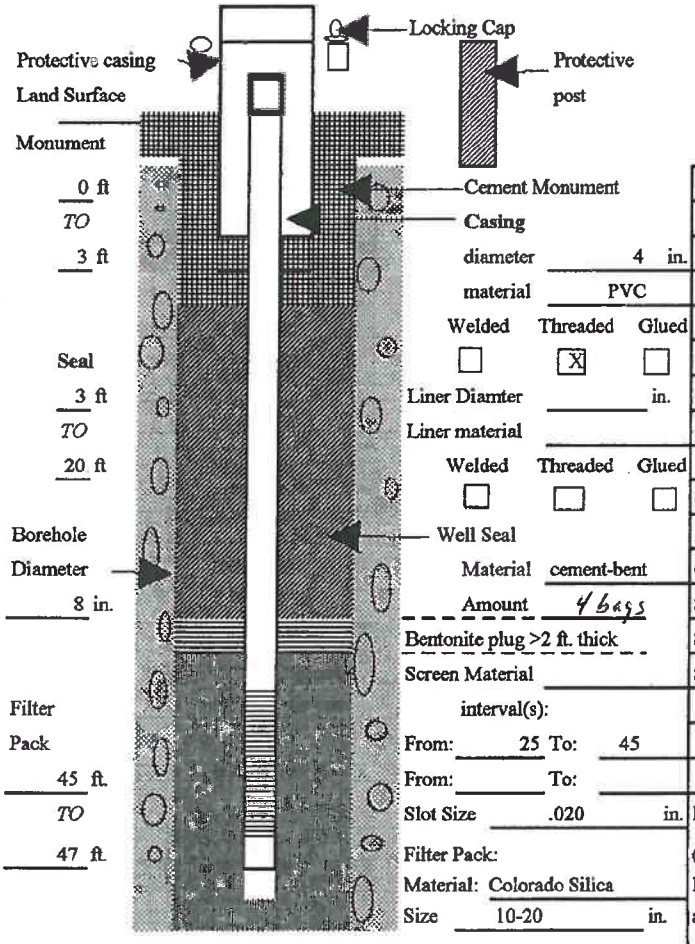
[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 45 ft.



Casing diameter 4 in. material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Material cement-bent
Amount 4 bags
Bentonite plug >2 ft. thick
Screen Material
interval(s):
From: 25 To: 45
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield N/A GPM
Conductivity pH
Temperature of water F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks: bottom hole backfilled w/pellets&sand 47-76.5'
Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 6
1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tax lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

Dry to 45.5 Feet below land surface. Date: October 2, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Gravely sandy loam, med. gray brown	0	10	
dry.			
Siltstone tan-gray	10	29	
Sandstone-yellow-tan	29	32.5	
Sandstone - orange	32.5	33.5	
Sandstone, yellow-tan	33.5	46.5	
Clayey siltstone, gray and tan with sand	46.5	48	
Sandstone, tan-brown	48	59	
Clayey siltstone w/sand, tan-gray	59	62	
Sandstone, yellow-tan	62	64	
Carbonaceous shale	64	68	
Siltstone, med. gray-brown			
Sandstone, tan-orange	68	71	
Sandstone, light tan	71	76.5	

Date Started 10-1-93 Completed 10-2-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10096
Signed [signature] Date 1-12-94

59766 / MALH 2980

OWNER : Newmont Gold

PROJECT : Grassy Mtn

BORING NO. MWS-8

LOCATION :

COORDINATES N. _____ E. _____ ELEV. _____

PAGE 1 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	SOIL CLASSIFICATION	SAMPLES	STANDARD PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DESCRIPTION OF SOILS
5		SM	MWS-8 (5)		dry	light grayish brown, loose, sandy loam with alluvial gravels (alluvium/colluvium)
10		CL	MWS-8 (10)		damp	lt. tan-gray, clay loam with minor (< 10%) gravels and sand. transition between bedrock and alluvium.
15						↘ at 10' bedrock see sheet 2 of 2 for Description and log.

LOG OF BORING

OWNER: Newmont Gold 59766 / MALH 2980 BORING NO. MWS-8

PROJECT: Grassy Mtn TYPE OF DRILLING: rotary air

LOCATION: [redacted] ANGLE FROM HORIZONTAL: 90°

COORDINATES N. _____ E. _____ ELEV. _____ PAGE 2 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #	OTHER DATA: Feet below ground surface	OTHER DATA: Well Description
10		see description on page 1 of 2 for soil log								5.0	5" bentonite cement grout
15		Siltstone, lt. tan-gray	damp						MWS-8 (15)		
20			slightly damp						MWS-8 (20)	20.0	
25			damp						MWS-8 (25)	23.0	bentonite pellets
30		Sandstone, yellow-tan friable, to unconsolidated	slightly moist						MWS-8 (30)		centralizer
		Sandstone, orange	moist								CSS sand pack
35		sandstone yellow-tan friable	slightly moist Fe ox nodules 1-2 cm in lenses assoc. w/ organic matl						MWS-8 (35)		
40			slightly moist						MWS-8 (40)		screen
45									MWS-8 (45)		
		clayey Siltstone, gray-tan w/ sand	slightly moist							45.8	centralizer
50		Sandstone, tan brown	slightly moist						MWS-8 (50)	47.0	CSS sand
55									MWS-8 (55)	50.0	bentonite pellets
60		Clayey Siltstone with Sand, tan-gray	damp						No sample taken MWS-8 (60)		CSS Sand
		Sandstone, yellow-tan	damp							60	
65		Carbonaceous Shale-Siltstone, medium grayish brown w/ organic matl	damp						MWS-8 (65)		bentonite pellets
70		Sandstone, tan-orange	damp						MWS-8 (70)	69	
75		Sandstone, light tan yellow, friable, fine grained w/ muscovite grains common	slightly damp						MWS-8 (75)	73	CSS sand
76.5		T.D. 76.5							blow out hole no sample taken	T.D. 76.5	bentonite pellets

XW HW MM SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

9

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2995

22S/44E/5ca

Start Card # 59767

(1) OWNER/PROJECT: WELL NO. MWS-9

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

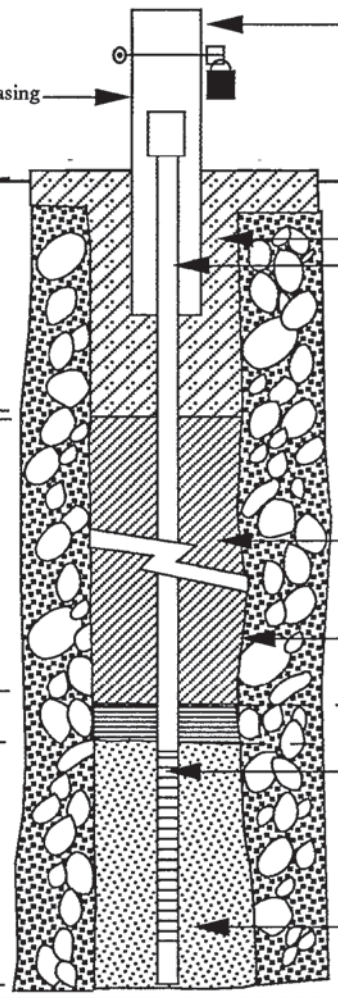
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth of completed well 40 ft.



Monument 0 ft. TO 3 ft.

Seal 3 ft. TO 13 ft.

Filter pack 15 ft. TO 41 ft.

Cement monument
Casing diameter 4 in. material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner diameter N/A in. material
Welded [ ] Threaded [ ] Glued [ ]
Well seal: Material Cement/bent Amount 5
Borehole diameter 8 in.
Bentonite plug at least 2 ft. thick
Screen material PVC
interval(s): From 20 To 40
From To
Slot size .020 in.
Filter pack: Material Colorado Silica Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Permeability — Yield — GPM
Conductivity — PH —
Temperature of water 56 °F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom? —
Depth of strata to be analyzed. From — ft. to — ft.
Remarks: —

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur 59767 / MALH 2995
Township 22 S (N or S) Range 44 E (E or W) Section 5
1. NE 1/4 of SW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

Dry to 42.8 ft. below land surface. Date 10/02/93
Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG: Ground elevation —

Material	From	To	SWL
Pebbles & silty soil	0	8	
Silty claystone brown	8	10	
Claystone light brown	10		
yellow streaks		14	
Claystone gray clayey	14		
siltstone very low			
sand buff		16.5	
Sandstone white very	16.5		
fine grained inter			
bedded with claystone		23	
Sandstone yellow	23		
med grained feldspar			
quartz		38	
Claystone orange & brn	38		
shaley with yellow			
streaks		40	
Claystone gray	40	45	

Date started 10/01/93 Completed 10/02/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10098 Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-12-94

OWNER : Newmont Gold

PROJECT : Grassy Mountain

LOCATION : 300' N of Solution Pond - 200' E of Road.

COORDINATES N. _____ E. _____ ELEV. _____

59767 / MALH 2995

BORING NO. MWS-9

TYPE OF DRILLING: Air Rotery

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 2

ELEVATION @ 45' DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
5		Alluvial Materials							Riser To 5'
10		Silty Claystone, Light Brown							Cement 5'
		Claystone Light Brown w/ Yellow Streaks							4% Bentonite Powder 96% Cement
15		Claystone, Gray-Clayey Siltstone Very Low Sand, Buff							8" Damp
		Sandstone, White Very Fine Grained / Interbedded w/ Claystone	Very Thin Claystone Lens						10' Dry
20									14' Dry
									16.5' Centralizer
25		Sandstone, Yellow Medium Grained ~30% Feldspar 70% Quartz	Very Fine Grained Buff, Sandstone Grades into Medium grained Yellow Sandstone						Dry
30									23' Damp @ 29'
35									10-20 Colorado Silica Sand
40		Claystone, Orange + Brown w/ Yellow Streaks	Shaley						38' Centralizer
		Claystone, Gray							Damp 40
			BOH @ 45'						0.020 Sch 40 PVC 4"
									41' Bentonite Pellet Plug
									45'

*Note: Bentonite Pellet Plug From 15' to 15'

Sch 40 PVC Blank 4"

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

WELL I.D. # L

59768 / MALH 54197

(1) LAND OWNER Well Number 59768
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 25 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	4				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
10	25					☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68724 Longitude -117.35668
Township 22 ☐ N ☑ S Range 43 ☐ E ☐ W WM.
Section 5 SW 1/4 NE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3478

Material	From	To	SWL

Date started Completed

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

59768 / MALH 54197

OWNER : NEWMONT Gold
PROJECT : Grassy Mountain
LOCATION : 50'E of Topsoil Stockpile Area ~1000'N of Waste Rock Area
COORDINATES N. _____ E. _____ ELEV. _____

BORING NO. MW S-10
TYPE OF DRILLING: Air Rotery
ANGLE FROM HORIZONTAL: 90°
PAGE 2 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
5		Alluvial Materials							2.7' Riser
10									Cement 4% Bentonite Powder to 96% Cement from 5' to 2' → Bentonite Pellets from 7' to 5' → Sand from 26' to 7' →
15		Sandstone, Light Brown to Orange: Low Clay ~35% Feldspar 65% Qtz	Coarse Grained Friable						14' - Damp
		Claystone Orange w/ Yellow Streak							17' - Damp
20		Silty Claystone, Red	Shale, Oxidized						19' - Damp
		Silty Claystone, Grey	Shale						21' - Wet
		Sandy Claystone Orange	Coarse Grained						23.5 - Wet
			BoH						1/8 Colorado Silica Sand From 26' to 25'

4" Sch 40 PVC Blank

10-20 Colorado Silica Sand

4" Sch 40 PVC 0.020 Screen From 25' to 15'

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

SPF 2B

59769 / MALH Unknown

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OR 690-240-095)

Start Card # 59769

(1) OWNER/PROJECT:

WELL NO. MWS-7

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [X] Abandonment

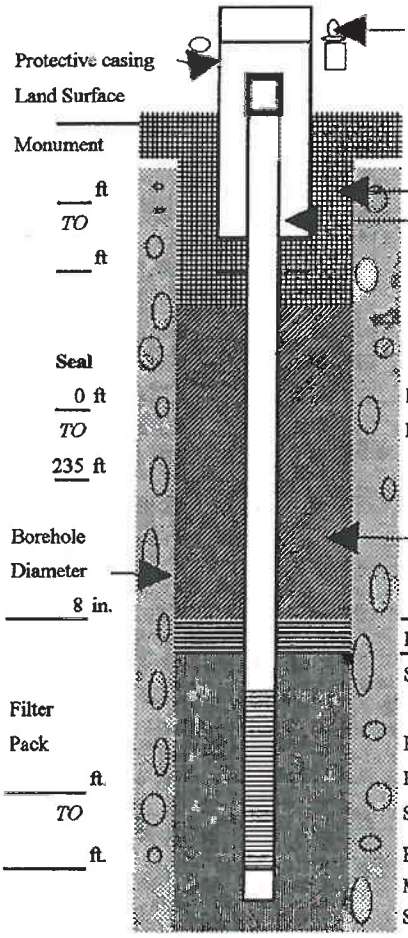
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth completed well 235 ft.



Casing diameter ____ in. material ____ Welded [ ] Threaded [ ] Glued [ ]

Liner Diamter ____ in. Liner material ____ Welded [ ] Threaded [ ] Glued [ ]

Well Seal Material Cement-bent Amount 52

Bentonite plug >2 ft. thick

Screen Material ____ interval(s): From: ____ To: ____ From: ____ To: ____ Slot Size ____ in.

Filter Pack: Material: ____ Size ____ in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Permeability ____ Yield ____ GPM

Conductivity ____ pH ____

Temperature of water ____ F/C Depth artesian flow found ____ ft.

Was water analysis done? [ ] Yes [ ] No

By whom? ____

Depth of strata to be analyzed. From ____ To ____ ft.

Remarks: well was abandoned - dry hole

Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR

Township 22S (N/S) Range 44E (W/E) Section 12

SE 1/4 NE 1/4 of above section.

2. Street address of well location GRASSY MOUNTAIN VALE, OREGON

3. Tax lot number of well location N/A

4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

dry Feet below land surface. Date 10/13/93

Artesian Pressure ____ lb/sq.in. Date ____

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Soil - alluvium	0	5	
Green lithic tuff	5	87	
Rhyolite-dacite	87	100	
Lithic tuff - tan	100	105	
Rhyolite - Dacite	105	130	
Green - tan lithic tuff	130	160	
Green tuff with rhyolite fragments	160	175	
Green-gray tuff	175	235	

Date Started 10-12-93 Completed 10-13-93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098

Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096

Date 1-12-94

59770 / MALH 2983

MALH 2983

RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/43E/13 bca

STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095) Start Card # 59770

(1) OWNER/PROJECT:

WELL NO. MWS-11

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

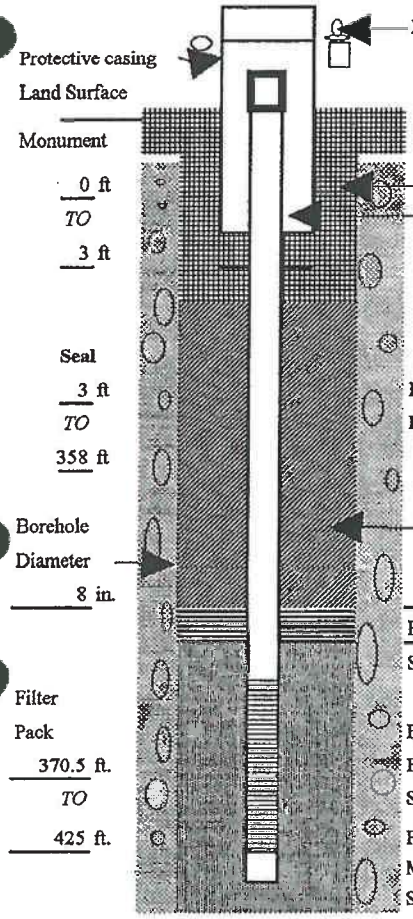
[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 207 ft.



Casing
diameter 4 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Well Seal
Material Cement-bent
Amount 78
Bentonite plug >2 ft. thick
Screen Material PVC
interval(s):
From: 374 To: 424
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield not measurable GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks: water recovered in hole, but very low production

Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 43E (W/E) Section 13
1. NE1/4 of NW 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tas lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

141 Feet below land surface. Date: October 17, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

RECEIVED FEB 4 1994 WATER RESOURCES DEPT. SALEM, OREGON

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Brown sitly fine sand with cobbles	0	30	
Gray green lithic tuff	30	84	
Tuff and Rhyodacite	84	150	
Airfall lithic tuff	150	330	
Rhyo-dacite clasts	330	395	
Rhyo-dacite conglomerate	395	424	

Date Started 10-14-93 Completed 10-17-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed [signature] MWC Number 10096 Date 1-17-94

MAIH 2984 RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/44E/8dd

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0[illegible])

Start Card # 59772

(1) OWNER/PROJECT:

WELL NO. MWS-13

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

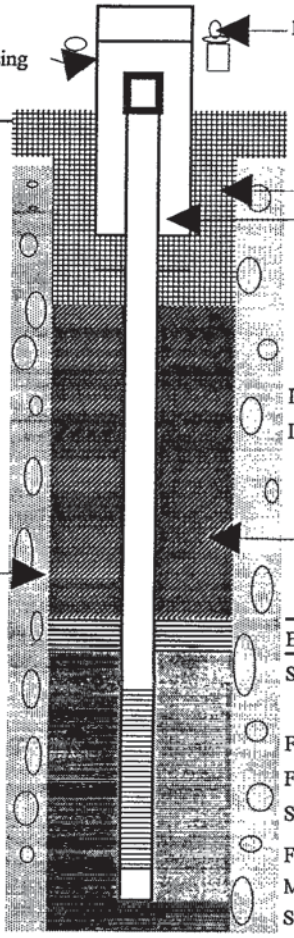
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 207 ft.

59772 / MALH 2984



Casing
diameter 4 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Material Cement-bent
Amount 35
Bentonite plug >2 ft. thick
Screen Material PVC
interval(s):
From: 146 To: 206
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield GPM
Conductivity pH
Temperature of water 51o F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tax lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

RECEIVED FEB 4 1994 WATER RESOURCES DEPT. SALEM, OREGON

(7) STATIC WATER LEVEL:

95 Feet below land surface. Date OCTOBER 19, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL
125	207	35	95'

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Brown silt and clayey silt	0	9	
with cobbles			
Brown siltstone with basalt	9	27	
pebbles			
Brown siltstone with some	27	137	
some claystone			
Basalt weathered and	137	156	
fractured			
Basalt, very weathered	156	165	
Basalt	165	207	

Date Started 10-18-93 Completed 10-19-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. WWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. WWC Number 10096
Signed [signature] Date 1-12-94

MALH 54071

26-092-915 / MALH 54071 WELL I.D. # L 109354

(1) LAND OWNER Well Number 26-092
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.67244 Longitude -117.35586
Township 22S N or S Range 44E E or W. WM.
Section 8 SW 1/4 NE 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
71.67 ft. below land surface. Date 6/7/2012
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
General geology of the area consists of a series of intercalated sedimentary and volcanic formations of late Tertiary age. This well was originally drilled as an exploratory hole in 1988 or 1989. The hole was drilled to a total depth of 915 feet. OWRD staff sounded the well to a depth of 93 feet in 2012. The well could be blocked, or it may have collapsed. Construction at land surface consists of a 2" gray plastic casing inside of an 8.5" steel casing.			

Date started Completed 12/31/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. mine site. Reports are housed in OWRD Groundwater Section library.

COMPILED BY: Josh Hackett, OWRD Groundwater Section

DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

57-1 / MALH 54195

WELL I.D. # L _____

(1) LAND OWNER Well Number 57-1
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 765 ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	1.25				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
108	138					☑	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.66796 Longitude -117.36421
Township 22 ☑ N ☐ S Range 43 ☑ E ☐ W WM.
Section 8 NW 1/4 SW 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
____ ft. below land surface. Date
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3769

Material	From	To	SWL

Date started ____ Completed ____

SOURCE OF DATA/INFO
Data in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

57-10 / MALH 54196

WELL I.D. # L _____

(1) LAND OWNER Well Number 57-10
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other _____

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 500 ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other _____
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
126	156					☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.66796 Longitude -117.36421
Township 22 ☑ or ☐ N or ☐ S Range 43 ☐ or ☐ E or ☐ WM.
Section 8 NW 1/4 NE 1/4
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 3681

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL

Date started _____ Completed _____

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

MALH 54072

89-2 / MALH 54072

WELL I.D. # L 109360

(1) LAND OWNER Well Number 89-2
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	+2.8	?	Protective	☒	☐	☐	☐
	2"	+2.5	?		☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68335 Longitude -117.39706
Township 22S N or S Range 43E E or W. WM.
Section 2 NW 1/4 SE 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:
52.54 ft. below land surface. Date 6/7/2012
Artesian pressure ____ lb. per square inch Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL
200		8 gpm	
265		30 gpm	
305		37 gpm	
340		47 gpm	
365		55 gpm	

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
See attached lithologic log			
sounded to a depth of 129 feet by OWRD staff on 6/7/2012			

Date started ____ Completed 12/31/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. Mine site. Reports are housed in OWRD Groundwater Section library.

COMPILED BY: Josh Hackett, OWRD Groundwater Section

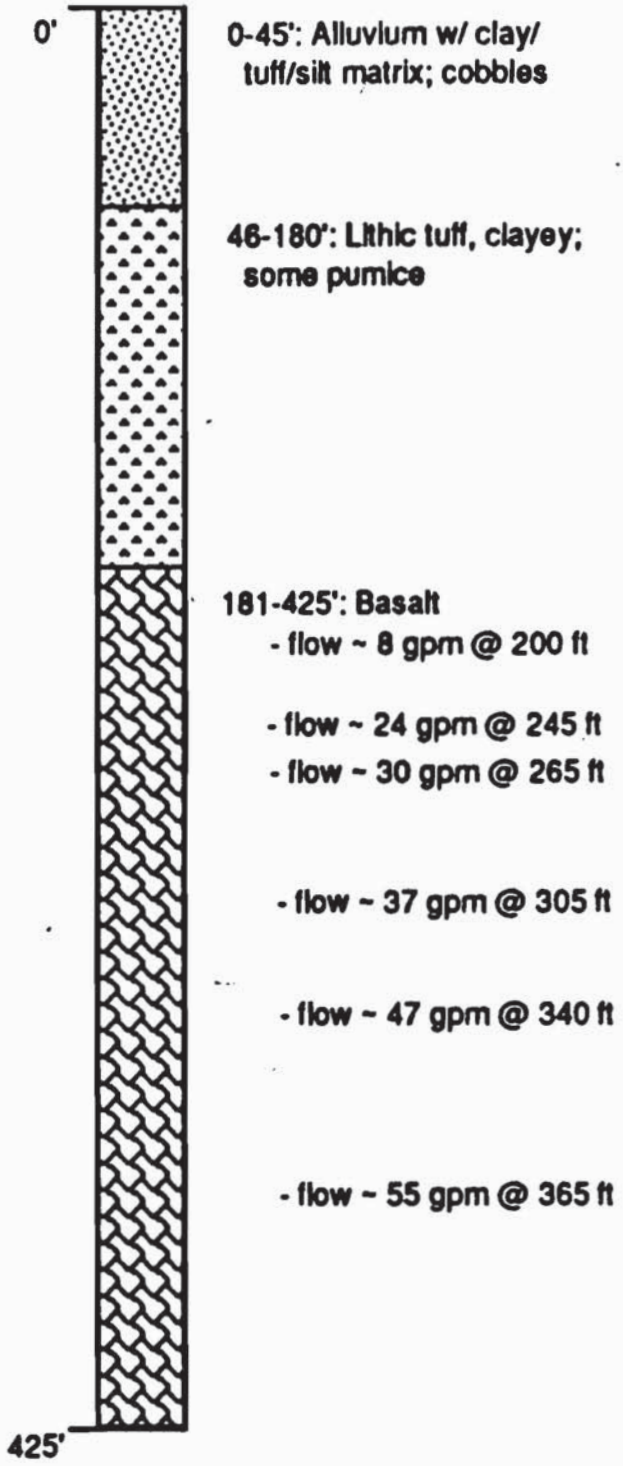
DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

MALH 54072

L-109360

89-2 / MALH 54072



89-2

SPF 17

TELECOPIER 7010 ; 2-22-91 1:53PM ; 2083455897;#

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT

Bishop Well / MALH 54046

STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. #13
State Permit No. _____

(1) OWNER:

Name John Bishop
Address Vale, Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Stock Threaded ☐ Welded ☒
12 Diam. from 1 ft. to 150 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No.
Type of perforator used Torch
Size of perforations in. by in.
18' perforations from 135 ft. to 145 ft.
perforations from ft. to ft.
perforations from ft. to ft.

SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Drive shoe used ☒ Yes ☐ No Plugs Size: location ft.
Any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:

(10) LOCATION OF WELL:

County Malheur Driller's well number
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found ft.
Static level 95 ft. below land surface. Date 6/15/6
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 12"
Depth drilled 482 ft. Depth of completed well 432 ft.

Formation: Describe color, texture, grain size and structure of materials and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Yellow Clay	0	15	
Fine Sand & Gravel	15	22	
Yellow Clay & Boulders	22	57	
Cemented Sand	57	75	
Cemented Sand & Gravel	75	106	
Coarse Gravel	106	112	water
Yellow Clay & Sm. Boulders	112	129	
Soft Sandstone	129	138	
Coarse Gravel	138	142	
Fine Sandstone	142	170	
Hard Gray Stonestone	170	238	
Soft Gray Sandstone	238	450	
Soft Sandy Blue Shale	450	462	
Fine Sand	462	481	
Soapsyone	481	482	
Wild Sand in Bottom			

Work started 5/7/63 19 Completed 6/19/63 19
Date well drilling machine moved off of well 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] _____ Date _____, 19__
(Drilling Machine Operator)
Drilling Machine Operator's License No.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name HYSELLS DRILLING
(Person, firm or corporation) (Type or print)
Address
[Signed] _____
(Water Well Contractor)

SPF 9-1

BLM Well / MALH 2277

BLM WELL

Copy of Well Log

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the TE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

APPROX ELEV. 3590

State Well No. _____

State Permit No. _____

CRYSTAL RIDGE WELL JOB # 4702

(1) OWNER: Bureau of Land Management
Name Box 700 , Vale Oregon
Address

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☒ Abandon ☐
If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other Stock

(5) CASING INSTALLED: Threaded ☐ Welded ☒
6 " Diam. from 0 ft. to 147 ft. Gage .280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☐ Yes ☒ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☒ Yes ☐ No
Manufacturer's Name VOP Johnson
Type Stainless Steel Model No.
Diam. 6 Slot size 10 Set from 159 ft. to 166 ft.
Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.
Static level ft. below land surface Date
Artesian pressure lbs. per square inch Date

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Bailer test 12 gal./min. with NO ft. drawdown after 4 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(10) CONSTRUCTION:
Was a seal—Material used One Sack Cement
Depth of seal 18 ft.
Diameter of well bore to bottom of seal 8 in. Below Seal
Were any loose strata cemented off? ☐ Yes ☐ No Depth
Was drive shoe used? ☐ Yes ☒ No
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(11) LOCATION OF WELL:
County Malheur Driller's well number
NE ¼ NW ¼ Section 8 T. 22 R. 44 W.M.
Bearing and distance from section or subdivision corner

Depth at which water was first found

(12) WELL LOG: Diameter of well below casing
Depth drilled 175 ft. Depth of completed well 175 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Yellow Clay	0	60	
Blue Clay	60	75	
Brown Clay	75	95	
Blue Clay	95	105	
Brown Clay	105	170	
White Sand	170	175	154
ORIGINAL 1972			
STATIC LEVEL	126'		
PUMP LEVEL	147'		
5 2 1/2 PIPE			
2 1/2 CYLINDER			
STATIC LEVEL AS OF	8/3/88		
x 150'			

Work started 8-15 1972 Completed 8-16 1972
Date well drilling machine moved off of well 8-16 1972

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) /S/ Winfield Page Date 1972
(Drilling Machine Operator)
Drilling Machine Operator's License No. 65

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Page Brothers Drilling
(Person, firm or corporation) (Type or print)
Address Rt. 2 Box 371 , Vale Oregon
/S/ Winfield Page

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
AUG 23 1972
STATE ENGINEER
SALEM OREGON

NC

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

Malh 2277

State Well No. 22S/44E-8 66

State Permit No.

BLM Well / MALH 2277

(1) OWNER:
Name Bureau of Land Management
Address BX 700 - Vale, Ore.
Owyhee Ridge Well

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☑ Reconditioning ☑ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☑ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other Stock ☑

(5) CASING INSTALLED:
Threaded ☐ Welded ☑
6" Diam. from 0 ft. to 147 ft. Gage .280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes ☑ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☑ Yes ☐ No
Manufacturer's Name U.O.P. Johnson
Type Stainless steel Model No.
Diam. 6 Slot size 10 Set from 159 ft. to 166 ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 12 gal./min. with NO ft. drawdown after 4 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 14 ft.
Diameter of well bore to bottom of seal 8 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 1 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☑ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Malheur Driller's well number
NW ¼ NW ¼ Section 8 T. 22 R. 44E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 165 ft.
Static level 154 ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6
Depth drilled 175 ft. Depth of completed well 175 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Yellow Clay	0	60	
Blue Clay	60	75	
Brown Clay	75	95	
Blue Clay	95	105	
Brown Clay	105	170	
White Sand	170	175	154

Work started 8-15 1972 Completed 8-16 1972
Date well drilling machine moved off of well 8-16 1972

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Winfield Page (Drilling Machine Operator) Date , 1972
Drilling Machine Operator's License No. #165

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name PAGE Bros. Drilling (Person, firm or corporation) (Type or print)
Address Rt. 2 BX 371 - Vale, Ore.
[Signed] Winfield Page (Water Well Contractor)
Contractor's License No. 564 Date 8/22, 1972

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

MALH 54404

GMW17-31 / MALH 54404

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125168

START CARD # 1035606

(1) LAND OWNER

Owner Well I.D. GMW-17-31

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

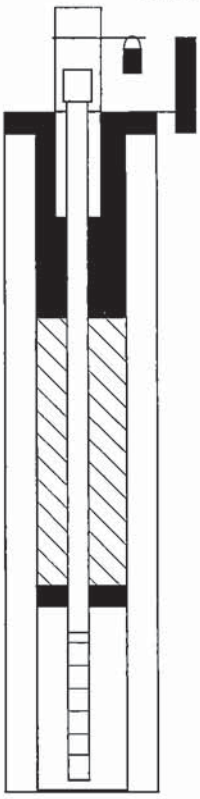
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 498.00 ft. Special Standard ☐



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 98

CASING
Dia. 12 From ☒ 3 To 98
Gauge .250 Wld Thrd
Material ◉ Steel ○ Plastic ☒ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ○ Steel ○ Plastic ☐ ☐

SEAL
From 0 To 38
Material Bentonite Chips
Amount 36 Sacks Grout weight _____

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 458 To 498
Slot Size 0.020

FILTER
From 453 To 455 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

○ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer SPF Water Engineering

DEC 21 2017

Water quality concerns? ☐ Yes (describe below)

SALEM, OR

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 100
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67387000 DMS or DD
Long ° ' " or -117.35963000 DMS or DD
○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well			

Flowing Artesian? ☐ Dry Hole? ☒

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(8) WELL LOG

Ground Elevation 3711.00

Material	From	To
soft brown clay-top soil	0	3
brown decomposed sand & gravel	3	8
soft light brown sandstone	8	17
hard green sandstone	17	22
med. hard green sandstone	22	28
hard green sandstone	28	41
soft orange sandstone	41	47
soft red sandstone	47	55
sticky red clay	55	60
soft red clay some white clay strips	60	82
hard dark red strips of claystone	82	107
soft red & white clay	107	122
soft tan & red clay	122	142
med. hard red claystone	142	147
hard grey sandstone	147	157
med. hard orange, tan & red claystone	157	177
hard red yellow claystone	177	197
soft red clay	197	202
broken black basalt	202	212

Date Started 8/1/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically)
Signed TONY HACKETT (E-filed) Tony Hackett

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically)
Signed SAM P KINGREY (E-filed) Sam Kingrey
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MALH 54404

GMW17-31 / MALH 54404

MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L 125168

START CARD # 1035606

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
10	98	520

FILTER PACK

From	To	Material	Size
455	499	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	453	200	S	14.1
Cement	38	98	41	S	15.6
Cement	499	520	9	S	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	5	☒	2	458	sch80	○	●		☒

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
med. hard multicolored sandstone	212	217
soft yellow orange grey clay	217	242
hard layers sandstone grey	242	258
soft tan clay	258	269
strips of grey clay & grey sandstone	269	309
hard brown glassy rock	309	319
soft tan & grey clay	319	336
hard brown glassy rock	336	337
soft tan clay	337	342
hard fractured brown rock	342	351
hard layers brown sandstone w/clay strip	351	385
hard brown rock	385	397
hard int. lyrs sndstne/clay in 1' strips	397	446
brown clay	446	454
hard brown sandstone	454	456
soft brown clay	456	459
hard layers brown sandstone	459	465
brown clay	465	481
hard sandstone brown	481	498
sticky brown clay	498	520

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DEC 21 2017

SALEM, OR

Comments/Remarks

additional drillers 1)Jake Kingrey
2)David Dutcher

MALH 54405

STATE OF OREGON
MONITORING WELL REPORT GMW17-32 / MALH 54405
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125169

START CARD # 1036039

(1) LAND OWNER

Owner Well I.D. GMW-17-32

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

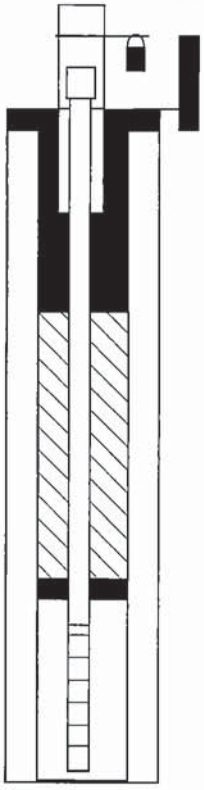
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 718.00 ft. Special Standard ☒



MONUMENT/VAULT Above Ground

From _____ To _____

BORE HOLE

Diameter 16 From 0 To 118

CASING

Dia. 12 From ☒ 2.5 To 118

Gauge .250 Wld Thrd

Material ◉ Steel ○ Plastic ☒ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ○ Steel ○ Plastic ☐ ☐

SEAL

From 0 To 118

Material Cement

Amount 66 Sacks Grout weight 15.6

SCREEN

Casing/Liner Casing Material PVC

Diameter 5 From 678 To 718

Slot Size 0.020

FILTER

From 668 To 670 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

◉ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
2		720	1
0.5	50	715	6

Temperature 60 °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer SPF Water Engineer

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

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DEC 21 2017
SALEM, OR

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM

Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101

Tax Map Number _____ Lot _____

Lat ° ' " or 43.67240000 DMS or DD

Long ° ' " or -117.36157000 DMS or DD

○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/6/2017		665

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES

Depth water was first found 244.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
9/10/2017	244	355	20		244
10/1/2017	665	720	2		665

(8) WELL LOG

Ground Elevation _____

Material	From	To
soft brown sandy dirt	0	5
soft clay white & green	5	25
hard green sandstone	25	37
soft clay red yellow orange	37	62
hard layers sandstone red & white	62	101
hard fractured sandstone	101	141
hard red & white mudstone	141	148
hard red & white sandstone	148	159
soft clay red tan yellow	159	202
med. hard red yellow sandstone	202	238
hard fractured blk rock w/clay strips	238	266
soft brown & white clay	266	280
hard black rock	280	291
soft white clay	291	306
blk fractured rock w/clay strips	306	336
brwn glassy rock frctrd w/brn cly lyrs	336	355
int, layers clay & brown rock	355	397
hard layers sandstone brown	397	476
hard grey sandstone	476	531

Date Started 8/29/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017

Password : (if filing electronically)

Signed TONY HACKETT (E-filed) Tony Hackett

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017

Password : (if filing electronically)

Signed SAM P KINGREY (E-filed) Sam P Kingrey

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MALH 54405

MONITORING WELL REPORT - WELL I.D. LABEL# L 125169

continuation page GMW17-32 / MALH 54405 START CARD # 1036039

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	1004

FILTER PACK

From	To	Material	Size
670	719	SILICA SAND	10/20

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Cement	0	460	376	S	15.6
C5	287	668	65	S	14.1
Cement	460	680	9	yds	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		5	X	2	678	sch80		●		X
●		8	X	1	655	.250	●		X	

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(8) WELL LOG

Material	From	To
soft white grey clay	531	568
fractured black rock w/clay strips	568	628
fractured brown rock	628	641
brown rock	641	653
hard black rock	653	663
1' strips sandstone & clay brown	663	719
soft clay tan white & grey	719	764
brown hard sandstone	764	795
soft brown clay	795	819
hard black rock	819	847
soft grey clay	847	861
sandstone layers brown red	861	911
soft grey clay	911	929
hard grey clay	929	932
med. hard white clay	932	945
hard claystone	945	952
soft white clay	952	967
grey claystone	967	975
soft white clay	975	985
hard grey claystone	985	1004

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DEC 21 2017

SALEM, OR

Comments/Remarks

see attached special standards request for seal, sand filter and bottom hole completion, see also diagram of well in special standards. Additional drillers
1) Jake Kingrey
2) David Dutcher

MALH 54406

STATE OF OREGON
MONITORING WELL REPORT GMW17-33 / MALH 54406 **WELL I.D. LABEL# L** 125170
(as required by ORS 537.765 & OAR 690-240-0395) **START CARD #** 1036990

(1) LAND OWNER

Owner Well I.D. GMW-17-33
First Name _____ Last Name _____
Company CALICO RESOURCES USA CORP
Address P O BO Q
City VALE State OR Zip 97918

(2) TYPE OF WORK

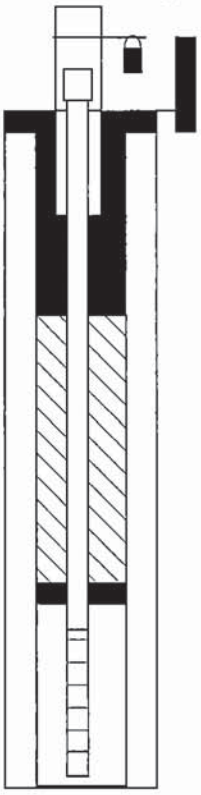
[X] New [ ] Deepening [ ] Conversion
[ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Hollow Stem Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) CONSTRUCTION

Piezometer Well [ ]
Depth of Completed Well 340.00 ft. Special Standard [ ]



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 118

CASING
Dia. 12 From [X] 3 To 118
Gauge .250 Wld Thrd
Material (•) Steel ( ) Plastic [X] [ ]

LINER
Dia. _____ From [ ] _____ To _____
Gauge _____ Wld Thrd
Material ( ) Steel ( ) Plastic [ ] [ ]

SEAL
From 0 To 118
Material Cement
Amount 69 Sacks Grout weight 15.6

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 238 To 338
Slot Size 0.020

FILTER
From 233 To 235 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

(•) Pump ( ) Bailer ( ) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		340	1
40	28	335	2

Temperature 60 °F Lab analysis [ ] Yes
RECEIVED BY OWRD
Supervising Geologist/Engineer SPF Engineering
Water quality concerns? [ ] Yes (describe below)
DEC 21 2017

From	To	Description	Amount	Units

SALEM, OR

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67235700 DMS or DD
Long ° ' " or -117.36162400 DMS or DD
(•) Street address of well ( ) Nearest address
REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/28/2017		243

Flowing Artesian? [ ] Dry Hole? [ ]
WATER BEARING ZONES Depth water was first found 251.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
11/28/2017	243	338	20		243

(8) WELL LOG

Ground Elevation _____

Material	From	To
brown clay boulders	0	16
brown clay & rock fragments	16	23
redish sandstone, clay strips	23	30
green claystone	30	35
green & red sandstone	35	46
tan & red claystone	46	73
white,yellow & red clay	73	92
tan claystone	92	98
tan clay layers with rock	98	110
bown & red sandstone	110	120
red, white & brown very hard clay	120	172
red clay with brown strips soft	172	185
red clay, bounces on rock	185	200
brown sandstone	200	212
brown clay strips, sandstone	212	220
brown clay	220	225
brown & grey clay	225	230
brown sandstone	230	245
brown clay	245	251

Date Started 11/2/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically)
Signed TONY HACKETT (E-filed)

(bonded) Monitor Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically)
Signed SAM P KINGREY (E-filed)
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L125170

GMW17-33 / MALH 54406

START CARD # 1036990

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	365

FILTER PACK

From	To	Material	Size
235	339	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	233	132	S	14.1

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		5	X	2	238	sch80		●		X

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
fractured black rock	251	290
grey clay	290	295
black, brown fractured rock	295	314
grey clay strips with black rock	314	320
grey clay	320	327
black, grey rock fractured	327	338
brown clay	338	365

RECEIVED BY OWRD
DEC 21 2017
SALEM, OR

Comments/Remarks

Jake Kingrey

David Dutcher

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

GMW17-34 / MALH 54437

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name Last Name
Company CALICO RESOURCES USA CORP.
Address PO BOX Q
City VALE State OR Zip 97918

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [ ] Community
[X] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 890 ft.

BORE HOLE

Dia	From	To
16	0	200
14	200	355
12	355	790
10	790	950

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	8	8	S
		Calculated		
Bentonite Chips	8	199	141	S
		Calculated		

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[X] Other Bent. tagged from
Backfill placed from 892 ft. to 950 ft. Material bent chips
Filter pack from 828 ft. to 892 ft. Material sand Size 8/12
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	12	X	3	55	.250	◉	○	X	
◉	○	12		55	355	.375	◉	○	X	
◉	○	10	X	2	790	.250	◉	○	X	
◉	○	5	X	3	830	40	◉	○	X	
○	○						○	○		

Shoe [X] Inside [ ] Outside [ ] Other Location of shoe(s) 355
Temp casing [ ] Yes Dia From + To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type v-wire slotted Material SS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/pipe size
Screen	Casing	5	830	890	.03			5

(8) WELL TESTS: Minimum testing time is 1 hour

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County MALHEUR Twp 22 S N/S Range 44 E E/W WM
Sec 8 NW 1/4 of the SE 1/4 Tax Lot 101
Tax Map Number Lot
Lat ° ' " or 43.669 DMS or DD
Long ° ' " or -117.3584 DMS or DD
( ) Street address of well (•) Nearest address
GRASSY MTN. REFER TO GPS

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	06-17-2018			

Flowing Artesian? [ ] Dry Hole? [X]

WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Ground Elevation

Material	From	To
loose brown clay with rocks	0	3
brown hard clay	3	6
red, black sandstone crumbly	6	14
red, black boulders rough	14	18
brown clay soft	18	22
brown clay red black boulders	22	34
black red brown boulders	34	76
light brown clay	76	112
brown tan clay some boulders	112	140
dark brown clay some boulders	140	200
brown clay	200	204
crumbly brown rock with clay	204	225
yellow clay with some grey rock	225	235
yellow clay	235	245
brown clay, brown & green rock	245	265
light brown clay	265	277
brown, red grey color rock	277	287
brown clay	287	292
brown red green rock	292	305

Date Started 4-17-18 Completed 6-21-18

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 7/11/18
Signed Tony Hackett

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 7-12-18
Signed Thomas Kenyon
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version: 0.95

WATER SUPPLY WELL REPORT - continuation page

GMW17-34 / MALH 54437

WELL I.D. LABEL# L	130031
START CARD #	1038395
ORIGINAL LOG #	

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

Water Quality Concerns

From	To	Description	Amount	Units

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To

SEAL Material	From	To	Amt	sacks/lbs
Cement	199	200	70	S
		Calculated		
Cement	200	355	27	S
		Calculated		
Cement	0	790	124	S
		Calculated		
Cement	0	826	296	S
		Calculated		

FILTER PACK

From	To	Material	Size
826	828	SILICA SAND	16/30

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(11) WELL LOG

Material	From	To
brown red & white rock	305	320
grey rock with some grey clay	320	325
multicolored sandstone	325	330
green clay with rock	330	345
fractured rock lost circulation	345	360
fractured rock red black tan	360	371
tan clay smooth	371	372
fractured rock rough drilling, red	372	383
grey clay smooth	383	387
grey color bouncing rough sandstone	387	394
grey clay smooth	394	397
red tan sandstone fractured	397	402
yellow soft clay	402	405
tan brown clay	405	410
green rock very hard	410	420
fractured sandstone, lost circulation	420	423
yellow clay	423	430
sandstone fractured tan colored	430	438
grey clay	438	439
hard sandstone	439	441
binding bouncing fractured sandstone	441	446
yellow clay smooth	446	480
tan clay smooth	480	496
hard sandstone red brown	496	497
grey clay smooth	497	499
fractured sandstone red brown	499	500
red clay smooth	500	538
fractured sandstone red brown	538	542
brown clay smooth	542	576

(7) PERFORATIONS/SCREENS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Comments/Remarks

12" UNDERREAMER SHOE @ 790

10" UNDERREAMER SHOE @ 355

WATER SUPPLY WELL REPORT - continuation page

GMW17-34 / MALH 54437

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

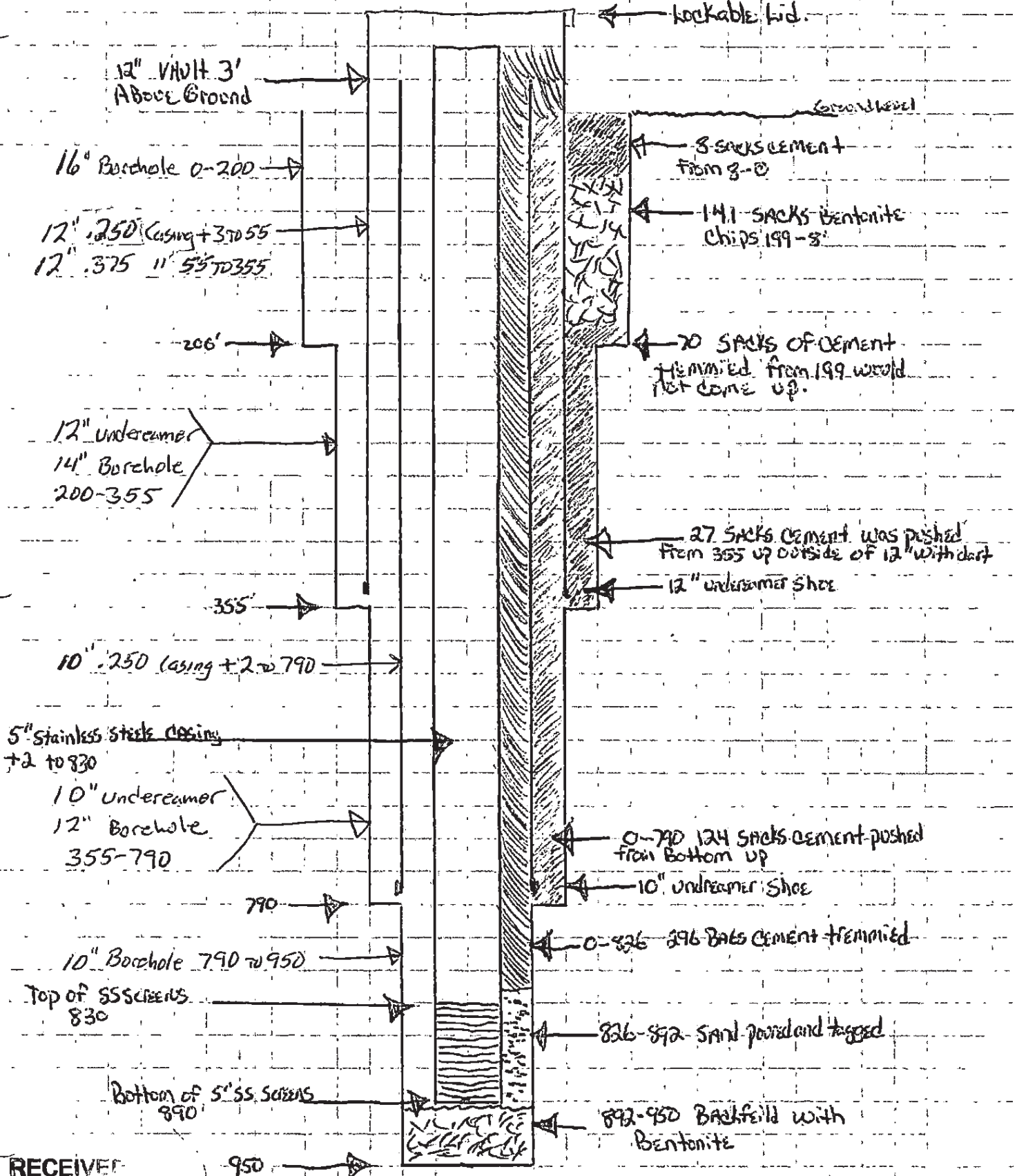
(11) WELL LOG

Material	From	To
fractured sandstone brown grey	576	585
red clay smooth	585	612
fractured grey sandstone	612	623
fractured red brown grey sandstone	623	647
fractured brown grey sandstone	647	671
grey sandstone, red black chips	671	675
grey brown white black siltstone	675	680
brown white fractured sandstone	680	690
brown red sandstone	690	695
brown sandstone	695	700
light brown yellow sandstone	700	705
brown red white black sandstone	705	710
brown sandstone	710	720
tan colored sandstone	720	730
tan colored sandstone	730	740
grey white red brown sandstone	740	762
white grey red sandstone	762	775
grey rusty red sandstone	775	800
grey red brown sandstone	800	890
brown clay & yellow	890	910
white, black, tough	910	950

Comments/Remarks

GMW17-34

GMW17-34 / MALH 54437



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GW-1 / MALH 2281

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Malh 2281

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FEB 16 1989

22S/44E/17CC

(START CARD) # 9258

(1) OWNER:

Well Number: 47-1 NAT

Name Atlas Precious Metals

Address 2025 Century Way

City Boise, State Id Zip 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☒ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 155.5 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12 1/4	160	122	Colo. Sand	160	122	9 sacks
12 1/4	122	115	Enviro Plug	122	115	2 sacks
12 1/4	115	+1	cement grout	115	+1	432 sacks

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material see above

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12 sand

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	12"	+2	8	250	☒	☐	☐	☐
					☐	☐	☐	☐
	4	+2	155.5	sch80	☐	☒	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on plug

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
135.5	155.5	.020		4"		☒	☐
135.5	+2			4" PVC		☒	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
	NA		1 hr.
60		160	

Temperature of water NA Depth Artesian Flow Found 140

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ Longitude ____

Township 22S N or S, Range 44E E or W, WM.

Section 17 NW ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) NA

(10) STATIC WATER LEVEL:

49 ft. below land surface. Date 1/21/89

Artesian pressure na lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 140- 160

From	To	Estimated Flow Rate	SWL
140	160	60	49

(12) WELL LOG:

Ground elevation 3698

Material	From	To	SWL
Brown Clay	0	35	0
Brown clay w/gravely sand	35	56	0
Blue Clay	56	122	0
Blue Clay & Gravel	122	140	?
Gravel	140	160	49

Date started 12/14/89 Completed 1/18/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 1202

Signed Robert W. Doty Date 2-13-89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 2-15-89

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

GW-2 / MALH 2279

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Malh 2279

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FEB 16 1989

WATER RESOURCES DEPT

22S/44E-8ac

(START CARD) # 9257

(1) OWNER:

Well Number: 47-2

Name Atlas Precoius Metals

Address 2025 Century Way

City Boise, State Id. Zip 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☒ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 325 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
			Sand	400	173	34
12 1/4	0	120	Enviro Plug	173	167	4
7 7/8	120	400	cement grout	167	+1	150

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from 400 ft. to 173 ft. Material colorado silica

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+2	10	250	☒	☐	☐	☐
					☐	☐	☐	☐
	4	+1.75	325	Sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on cap

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens X Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	290	.020		4"		☒	☐
290	+1.75	Blank		4"		☒	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
NO WATER			

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' ____ " Longitude ____ ' ____ "

Township 22 S N or S, Range 44 E E or W, WM.

Section 8 SW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) NA

(10) STATIC WATER LEVEL:

DRY ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found NONE

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation 3755

Material	From	To	SWL
Brown Clay	0	20	-
Brown Clay Blue Clay	20	100	-
brown/yellow	100	110	-
gray/brown	110	120	-
Blue/Gray	120	400	-

Date started 1/17/89 Completed 1/23/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 1202

Signed Robert W. Doty Date 2/13/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William C. Doty Date 2/13/89

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

STATE OF OREGON

WATER WELL REPORT
(as required by ORS 537.765)

GW-3 / MALH 2278

RECEIVED FEB 16 1989

Malh 2278

22S/44E/8bd

(START CARD) # 9259

(1) OWNER:

Well Number: 47-3ATER

Name: Atlas Precious Metals

Address: 2025 Century Way

City: Boise, State: Id Zip: 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 350 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12¼	0	400	Sand	400	200	32
			Enviro plug	200	198	2
			cement	198	+1	59

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from 400 ft. to 200 ft. Material colorado sand

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	4"	+1.5	320	sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
	6	62	10	.250	☒	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on plug

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	350	.020	-	4"		☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
****NO WATER*****			

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' ____ " Longitude ____ ' ____ "

Township 22 S N or S, Range 44 E E or W, WM.

Section 8 SE ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) na

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found DRY

From	To	Estimated Flow Rate	SWL
	****DRY*****		

(12) WELL LOG:

Ground elevation 3720

Material	From	To	SWL
Brown Clay	0	20	-
Brown Blue clay	20	60	-
Blue clay	60	120	-
Blue and gray clay	120	400	--

Date started 1/26/89 Completed 2/1/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Robert W. Doty WWC Number 1202

Date 2/13/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 2/13/89

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9809C 3/88

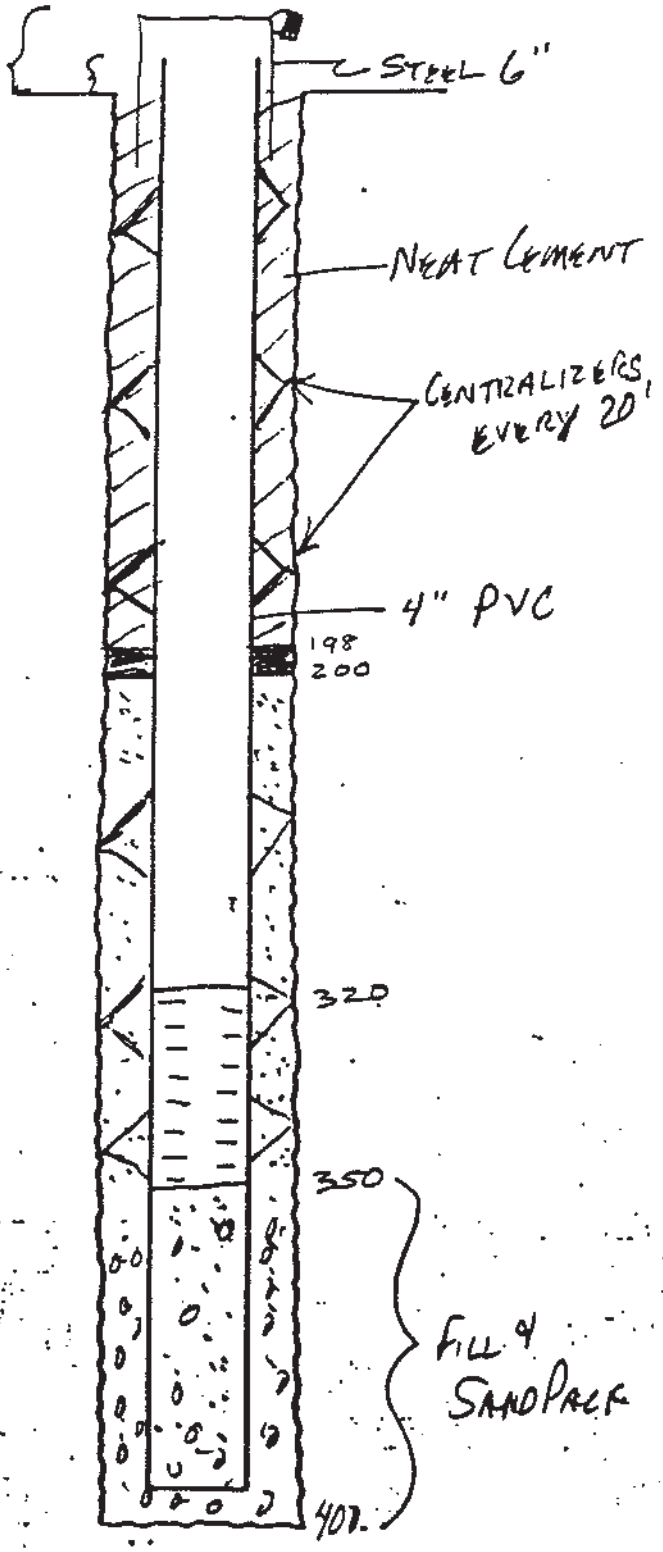
PIEZOMETER COMPLETION DIAGRAM

GW-3 / MALH 2278

DATE COMPLETED: 1-24-89 to 1-31-89
WEATHER: Cold, Hazy/Clear

PROJECT NAME/LOCATION: Atlas Grassy Mountain – Vale, Oregon
PROJECT # 219-8T-008
WELL LOCATION: Twn 26-20 & 26-21
PIEZOMETER NUMBER: (47-3) GW-3

PERMIT # _____
PROPERTY OWNER: BLM / Atlas
GEOLOGIST: K. Beiser / None
DRILLER: Duty Drilling / Dave Knarr & Bob D.
RIG TYPE & MODEL: Speedstar 15THH Air Rotary
AQUIFER: Bedrock – Grassy Mtn Fm?



COMPLETION SUMMARY

Total Well Depth 350
Stickup _____
Screen Type .020" PVC Sch 80 4" ID Flush Threaded
Screen 320 to 350
Top Seal:
Neat Cement from 0 to 198
Coarse Bentonite from 198 to 200
Gravel Pack from 200 to 400
Gravel Pack Material 8-12 Colo Silica
Bottom Seal:
None from _____ to _____
_____ from _____ to _____
Well Casing Diameter 6" steel + 4" PVC to 320
Well Casing Depth 6" steel to _____
Bit Diameter 12"
Drilled Depth 400'
Centralizers Every 20'
Protective Casing Yes – 6" steel
Logged – Y _____ N X
Type – SP ____ Res ____ Gamma ____
CAL ____ Por ____ Neutron ____
Remarks: Drilled to 400 ft w/ no measurable groundwater. Caving hole allowed PVC & sand pack to 350'. Washed down sand pack and poured 2 foot seal and trymmied neat cement. Boring past 250' & well installed unsupervised by Duty Drilling Co.

#4

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH 2579

GW-3A / MALH 2579

225/44E/8 bbb

(START CARD) # 24686

(1) OWNER:

Well Number: GW-3A

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH SUITE 3150

City DENVER State Colo Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☑ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 420 ft.

Explosives used Yes ☐ No ☐ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6"	0	420	SAND	380	420	20
			BENTONITE	380	0	40

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	0	420		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☑ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.010				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude ____ Longitude ____

Township 22.5 ☐ N or S. Range 44E ☐ E or W. WM.

Section 8 SE ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation ____

Material	From	To	SWL
ENCLOSED			

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APR - 1 1991

WATER RESOURCES DEPT.
SALEM, OREGON

Date started 11/12/90 Completed 11/17/90

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number ____

Signed ____ Date ____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed ____ Date ____

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PROPERTY GRASSY MTN
Logged by BILL STRIWD
UTM #

STATE OREGON
COUNTY MALHEUR

HOLE # GW-3A
DDH
RCH
CRH 6"

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 420
BEARING
ANGLE -90°

LOCATION

PG 1 OF 2

GRAPHIC: ALT | LITH

DRILLING NOTES					BOX#	FEET	COLOR	LITHOLOGY											STRUC.			ALTERATION				MINERALIZATION				VEINING			COMMENTS
TIME	RUN	CORE	%REC	NOTES				Qal	Slt	Sa	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	Cly	Bx	Vn	Cly	Vo	Arg	Sil	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Sil	Sul	
9:00				11/12/90		5	gry-brn																											OVERBURDEN SILTY SOIL well oxidized tuffaceous silts
9:30							or																											Fluffy clayey silt
							or																											bimodal grain size
10:15						25	ochre-gry																											angular silt grains
							ochre yel																											~60% cly 40% silt
							flesh pk																											clayey silt, prob tuffaceous
							or-brn-tn																											
11:00							tan																											mostly cly minor silt
						50	or																											
							or																											damp
							or-brn																											damp
							yel-brn																											reduced dry
12:00							yel-brn																											oxidized damp
						75	gray																											" dry
							tan-brn																											reduced
							tan-brn																											
							tan-gy																											some 5% silicic clast less fluffy
							gy																											clayey silts again
1:00						100	gy																											
							gy																											
							gy																											
							gy																											
						125	gy																											
2:00							lite gy																											~50% lithic clasts 20% silt
2:15				drill down 11/14/90			gy																											
							gy																											
						150	gy-brn																											70% silt 30% cly
10:30	Tripped for	tri cone		11/15/90			brn-gy																											70% cly 30% silt
				N.S.																														ND SAMP damp clay
11:30	inject H2O			N.S.			gy																											INJECT WATER clay 75% silt 25%
						175																											N.S. all cly
12:30							gy																											N.S. cly
							gy																											70% cly py
							gy																											85% cly py
						200	gy																											90% cly 15 silt 50% lithics
							gy																											
							gy-tan																											
							gy-tan																											
1:30						225	gy																											OXID. FXS ZONE silicic slt ++
							gy																											OXS FXS silicic slt +
							gy																											
							gy																											
						250	tan																											mod str. silicic arkose ++
							"																											ark J
3:00							"																											gypsum ark + +
							"																											ark silt ark silt V
						275	rd-brn tn																											silt ark
							tan																											ark + +
							tan																											ark +
							"																											ark + +
4:00						300	"																											mixed ark silts cly +
2:30	injector pump failed EOS 4:30			11-17-90			tan+gy																											+
3:30						325	tan+gy																											pyritic siltstone mix cly +
							lt gy																											pyritic clys +
							lt gy																											carbonaceous blk slts + gy clys +
							gy &																											mostly silts minor cly
							gy or																											
						350	blk, gy																											
							blk, gy																											

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NOV - 1 1991
WATER RESOURCES DEPT.
SALEM, OREGON

GW-3A / MALH 2579

PROPERTY GRASSY MTN
Logged by STROND
UTM #

STATE OR
COUNTY MALHUER

HOLE # DDH / RCH GW-3A / CRH

NORTHING
EASTING
ELEVATION

TOTAL DEPTH
BEARING
ANGLE

LOCATION

PG 2 OF 2

DRILLING NOTES					BOX# FEET	COLOR	LITHOLOGY												STRUC.				ALTERATION				MINERALIZATION					VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES			Qal	Slt	Ss	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	Cly	B X	V n	C y	V o	Arg	Sil	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Sil	Sul		ALT	LITH
11:30	truck H2O run			EOS	360	gy																													gy cly w/ minor slts		
9:00				11-18-90		gy br																													carbon mix, slts, ARK, CLY		
						bk, TN, GY																													reduced cly, slts, ARK, carb.		
				NO H2O		"																													POSSIBLE PRODUCING ZONE ??		
						"																													SILTS, TUFF ARK, CLAY		
						"																															
						"																															
						"																															
10:30					400	"																													mostly cly, some carb. silts, ARK		
						gy, bk																													more siltst., cly		
						gy, bk, TN																													mostly hard cly		
						gy bk																													plastic reduced cly		
11:30				NO H2O		dk gy																															

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APR 1 1991
WATER RESOURCES DEPT.
SALEM, OREGON

GW-3A / MALH 2579

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH # 2576

GW-3B / MALH 2576

225/44E/8 bc

(START CARD) # W24685

(1) OWNER:

Well Number: GW-3B

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH ST. SUITE 3150

City DENVER State COLO Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 340 ft.

Explosives used Yes ☐ No ☑ Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6"	0	340	SAND	340	300	20
			BENT.	300	SURFACE	30

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	340	0		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☑ Screens Type 1010 Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
340	320	.010		2"		☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude _____ Longitude _____

Township 22S N or S. Range 44E E or W. WM.

Section 8 SW ¼ NW ¼

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) NONE

(10) STATIC WATER LEVEL:

0 ft. below land surface. Date _____

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started 12/16/90 (WJ) Completed 12/18/90 (WJ)

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed _____ Date _____

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PROPERTY GRASSY MTN
Logged by WBS/
UTM #

STATE OREGON
COUNTY MACHUER

HOLE # DDH / RCH / CRH GW-3B

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 340
BEARING
ANGLE 90°

LOCATION

PG 1 OF

DRILLING NOTES: TIME	RUN	CORE	%REC	NOTES	BOX# FEET	COLOR	LITHOLOGY	STRUC.	ALTERATION	MINERALIZATION	VEINING	COMMENTS	GRAPHIC ALT	LITH
2:00	12-16-90			~~[illegible]~~	5	tan						overburden		
				drill		tan								
9:00	12-17-90			dry		tan-brn						silty clay		
					25	brn								
						"								
						light tan						sandy, silty, clay minor		
						or-rd								
10:00					50	red						sand increasing		
						"						sand str oxidized red		
						"						"		
						"						"		
						red-brn						mix cly sand silt		
					75	brn						silty clay loam		
11:00						yel-brn						"		
						"						"		
						brick						sand mostly well oxidized		
						brick rd						" "		
					100	ochre						ochre yellow clay		
						ochre						" " "		
						dk brn						clay		
						brn						silty clay		
12:00						lt brn						Minor sand + silt, mostly cly		
					125	lt brn						" "		
						med brn						clay		
						" "								
						gy-brn								
1:00	harder formation?					"								
					150	"								
2:00			moist			gy						weakly damp		
3:00			moist			gy								
						gy								
						gy								
					175	gy						powdery		
4:00						gy						"		
						dk brn						"		
~~[illegible]~~	~~EOS~~					gy-brn						"		
4:30	EOS					" "						"		
9:00	12-18-90 (CLS)			drill	200	gy						rean hole - becoming sticky		
				with		gy						some soft blk carbonaceous, mostly		
				water		gy-blk						some sand - large grains pink, white		
						gy								
					225	gy						minor white tuff. sand		
						gy								
						gy								
						gy-bk						minor blk sltst		
					250	brn-gy						sltst and clay		
				blow hole		brn-gy						mostly clay some white tuff sand		
						gy brn								
						gy brn								
						gy brn								
					275	gy						Fairy dense gy sltst		
				blow hole		gy						mostly clay some wht sltst		
						gy						mostly wht sltst or tuff		
						gy white						"		
				blow hole	300	wht-gy						Sand, carbonaceous, clear to milky		
						gy						[illegible] sltst and grains		
						gy						clay minor sltst		
						brn								
					325	brn								
						brn								
						brn								
						brn gy						mostly clay trace sand		
		EOS										blowing air, water + foam out of		
		clay @ 185'		12-18-90	10:00							original 3 well		
		squeezing off + caving			350									

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WATER RESOURCES DEPT.
SALEM, OREGON

GW-3B / MALH 2576

MALH 54073

GW-4 / MALH 54073 WELL I.D. # L 107460

(1) LAND OWNER Well Number GW-4
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	370	Bentonite Grout	0	272	
			Bentonite Pellets	272	275	

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	0	360	Protective	☒	☐	☐	☐
	4"	0	360	sch. 40	☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
280	350	0.020"				☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.70112 Longitude -117.36541
Township 21S N or S Range 44E E or W. WM.
Section 32 SE 1/4 NW 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
77.61 ft. below land surface. Date 6-7-2012
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL
50	55	1-2 gpm	
295	306	75 gpm	
340	345	100 gpm	

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
See attached lithologic and well construction logs.			

Date started ____ Completed 11/30/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. mine site. Reports are housed in OWRD Groundwater Section library

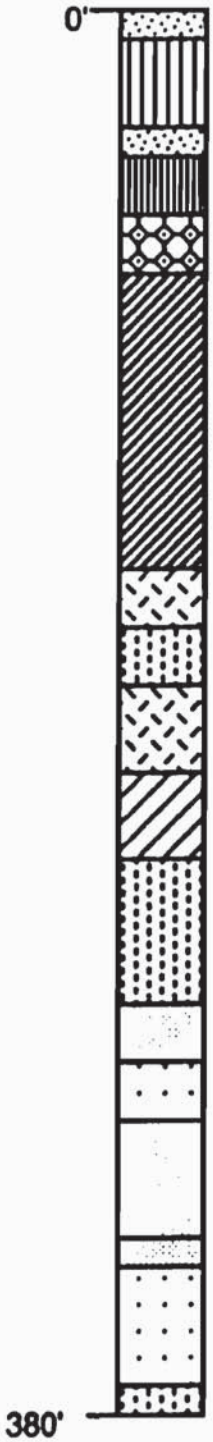
COMPILED BY: Josh Hackett, OWRD Groundwater Section

DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

L- 107460

GW-4 / MALH 54073



0-5': Alluvium

6-25': Brown clay w/sandstone

26-30': Alluvium

31-45': Clay w/silt

46-55' Chert-pebble - conglomerate w/ clay and sandstone (1-2 gpm @ 50')

56-150': Blue-grey clay

151-160': Sandstone; tuff

161-175': Clay w/ sandstone, conglomerate, and silt

176-195': Sandstone; tuff

196-225': Silt and sandstone

226-280': Clay w/ sandstone and conglomerate

281-305': Sandstone and conglomerate (75 gpm @ 295')

306-325': Conglomerate and sandstone w/ clay

326-340': Sandstone w/ clay and conglomerate (100 gpm @ 340')

341-345': Sandstone

346-370': Conglomerate w/ sandstone

371-380': Clay w/ sandstone

GW-4

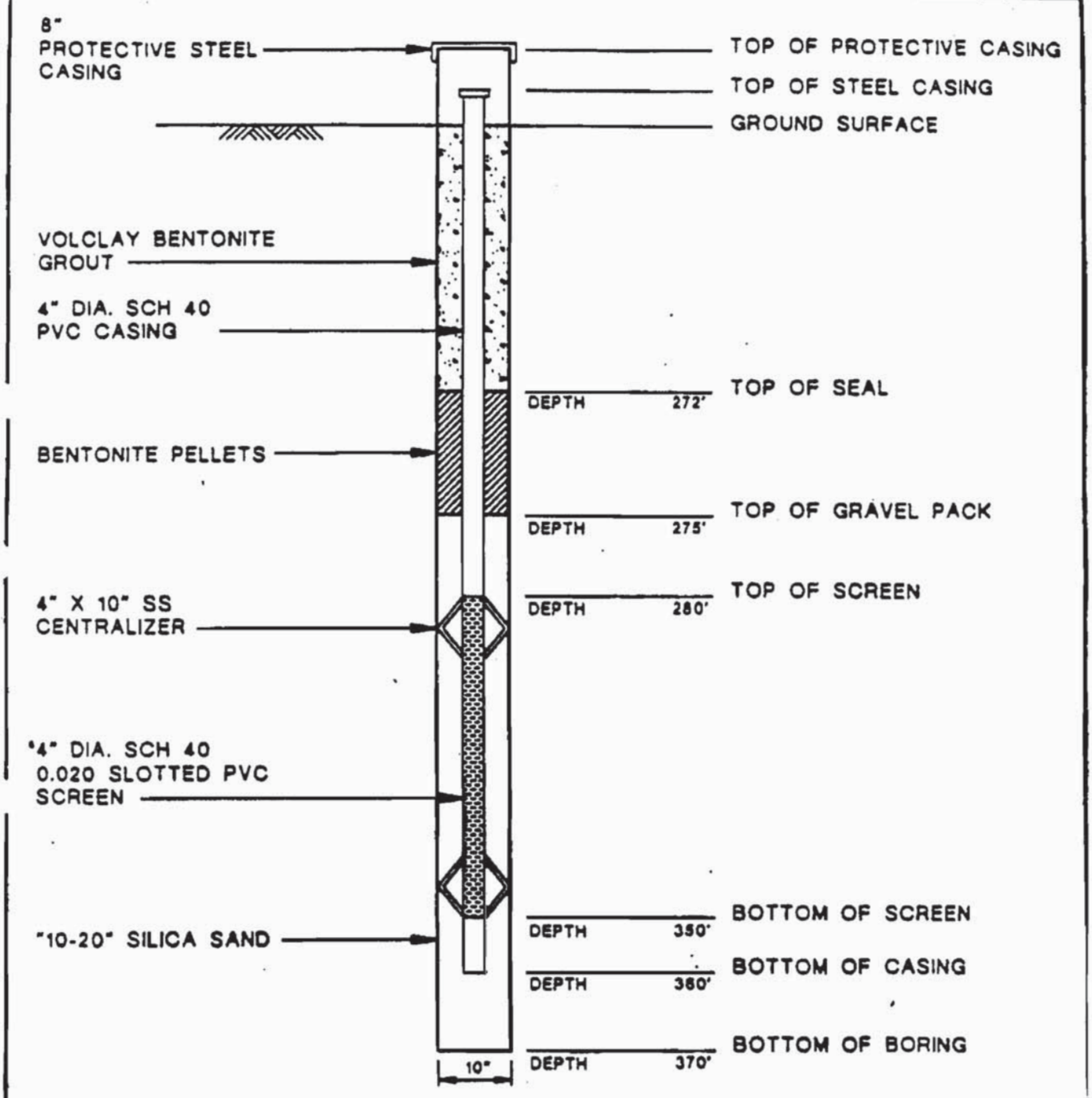
GW-4 / MALH 54073 MALH 54073

L-107460

STEFFEN ROBERTSON & KIRSTEN (U.S.)
Consulting Engineers & Scientists

CLIENT ATLAS PRECIOUS METALS
PROJECT GRASSY MTN.
PROJECT NO. 24101
DATE 11/89

WELL NO. GW-4-GM
BY E. DILLE



NOTES:
1. NOT DRAWN TO SCALE

MALH 54194

GW-5 / MALH 54194

WELL I.D. # L

(1) LAND OWNER Well Number GW-5
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other Unknown

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 265 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
204	224					☑	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68348 Longitude -117.37418
Township 22 ☐N ☑S Range 43 ☐E ☐W WM.
Section 1 NW 1/4 SE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3411

Material	From	To	SWL

Date started Completed

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT 11/16/2000

GW-5 / MALH 54194

PROPERTY Wood
Logged by GW-5
UTM #

STATE Oregon
COUNTY Malheur

HOLE # DDH
RCH GW-5
CRH

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 260'
BEARING
ANGLE

LOCATION

PG 1
OF 1

DRILLING NOTES					BOX#	FEET	COLOR	LITHOLOGY											STRUC.	ALTERATION				MINERALIZATION				VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES				Qal	Slt	Ss	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	B/V/C/V x/n/y/o	Arg	Sil	Py	Pro	Lim/Hem	Jar	Py	Sul	Ca	Sil	Sul		ALT	LITH
						5																								clean tuff w/wk Fe-oxides fresh tuff w/ fresh biotite " " w/rhyolite clasts " " some fe-oxides		
						25																								euhedral biotite wk fe-oxides		
						50																								fresh looking tuff few clasts		
						75																										
						100																								a few clasts of volcanics		
						125																								grey fragments w/fine pyrite fresh biotite " "		
						150																								a few frags w/pyrite fresh pyrite " " " "		
						175																										
						200																										
						225																								some coarse pyrite ; qtz		
					MISSING																												
						250																								strong argillization		
						260																								strong silicification		

#9

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH 25 7B

GW-6 MALH 2578

25/43E/12 ad

(START CARD) # 24683 (VS)

(1) OWNER:

Well Number: GW-6

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH ST. 3150

City DENVER State COLO Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 340 ft.

Explosives used Yes ☐ No ☐ Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6	0	340	SAND	300	340	20
			BENTONITE	300	0	40

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	0	340		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
300	340	.010				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Malh (VS) Latitude _____ Longitude _____

Township 22S N or S. Range 43E E or W. WM.

Section 12 SE ¼ NE ¼

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:

47 ft. below land surface. Date _____

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL

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APR - 1 1991

WATER RESOURCES DEPT.
SALEM, OREGON

Enclosed

Date started 11/27/90 (VS) Completed 12/1/90 (VS)

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed _____ Date _____

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

PROPERTY GRASSY MTN
Logged by WBS
UTM #

STATE OREGON
COUNTY MALHEUR

HOLE # DDH
RCH
CRH GW-6

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 340
BEARING
ANGLE -90°

LOCATION

PG 1
OF 1

DRILLING NOTES							LITHOLOGY														STRUC.	ALTERATION				MINERALIZATION				VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES	BOX #	FEET	COLOR	Qal	Slt	Sd	Tuff	Ls	Clh	Cry	Lgt	Rhy	And	Bas	Clay	BVx	CVnly	Arg	Slt	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Slt	Sul		ALT	LITH
3:30	drill	dry	dusty	11-27-90	5		tan tan tan																											
4:30				EOS 11:30-90																															
10:30					25																													
11:00				slough dr. hole																															
12:00			very damp		50																													
1:00			moist (not wet)		75																													
2:00					100																													
3:00					125																													
4:00			dust	EOS-																														
10:00				STUCK 11/30/90	150																														
	drill	dry																																
12:00			damp		175																													
12:30	drill	wet		inject H_2O																														
1:00				drilling fast	200		dk gy-grn																													
1:30					225																													
2:30					250																													
3:30				engine problems	275																													
4:30					300		lt gy																											
5:30			EOS	12-1-90																														
10:00	engine over heats			(down time)	325																													
				T.D.	340																													

RECEIVED
APR 1 1991
WATER RESOURCES DEPT.
SALEM, OREGON

SCREEN 300-340

NONE

NONE

100 ft (200'-305') water column in morning

formation H_2O collected overnight - water level @ 117' hole TD @ 140' not making H_2O to detect while drilling
CHECKED RECOVERY 2ll 11/29-97/2

zlt, sand, tuff (rhyolitic cobbles common) no significant alteration
grains are generally angular
mix: poorly consolidated clay + silt + sand, clay frags
heterolithic colluvium/alluvium of Miocene age ?? or Holocene ??
Qal and/or col sands ?
No more coasts, into tuffaceous bedrock, clays although as weakly consolidated as Qal above
tuffaceous clay + tuffite
STUCK IN HOLE/CAVING freed 5:30/11/29 checked water levels
N.S.
N.S.
N.S.
N.S.
N.S.
sample composite 145-165
Cogl. mixed w sd, slt, clay or heterolithic Tuff.
mostly congl. + clay minor silicic alteration
minor H_2O prod. on blowing hole
& lite gray sandstone in above mix
clay component decreasing (~2 gpm) blown hole making ~5-8 gpm with injected 2 gpm
Sandstone increasing
still making ~5-8 gpm - 2 gpm inject
water production decrease → 3-4 gpm

GW-6 MALH 2578

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

RECEIVED
JAN 4 1989
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2275

22S/44E/5BB

(START CARD) # 9256

(1) OWNER:

Well Number: MW-6

Name Atlas Precious Metals Inc.

Address 743 Horizon Court Suite 202

City Grand Junction State Colorado Zip 81506

(2) TYPE OF WORK: Prod-1 / MALH 2275

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 425 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14¾	0	18	Bent. Cement	18'	0'	25 SACKS
			Mixed 4# Bent & Cement (Portland)			
			to 100# to 5.5 gal of water			

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from 425 ft. to 100 ft. Size of gravel Col. Silica #8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	99	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	6"	~~425~~			☐	☐	☐	☐
		+2	425	Sch 80	☐	☒	☐	☒

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method 1120 Type I Astm 1785

☒ Screen Type ____ Material PVC Sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
40	255	.020		6"		☐	☒
325	355	.020		6"		☐	☒
380	420	.020		6"		☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
150		405	1 hr.
60	40	Set at 120	3 hr.

Pump

Temperature of water ____ Depth Artesian Flow Found See II

Was a water analysis done? No ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☒ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: 145-255, 325-355,

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ Longitude ____

Township 22S N or S, Range 44E E or W, WM.

Section 5 NW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

0 ft. below land surface. Date 12-17-88

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 145-255

From	To	Estimated Flow Rate	SWL
145	255	20 gpm	40
325	355	60 gpm	40
380	420	150 gpm	40

(12) WELL LOG:

Ground elevation 3520

Material	From	To	SWL
Overburden w/ Boulders	0	17	0
Clay (Brown)	17	140	0
Sand Stone w/ Blue Clay	140	255	40
Blue Clay	255	320	40
Sand Stone w/ Blue Clay	320	355	40
Blue Clay	355	380	40
Frac. (Hard) Sand Stone	380	415	40
Blue Clay	415	425	40
After setting 1 week			
water will come up			
to gr. level			
Between 6"&10" from			
100' to Mx. Level Annular Space			
is filled with Volcay Bent. pellets			

Date started 12/5/88 Completed 12/19/88

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 620

Signed Robert W. Doty Date 12/28/88

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 12/28/88

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

9

WATER WELL REPORT
STATE OF OREGON

MALH 2275

RECEIVED
DEC 19 1988
WATER RESOURCES DEPT.
SALEM OREGON

State Well No. 22S/44E/5ab

State Permit No. 9256

Prod-1 / MALH 2275, 2511

PLEASE TYPE or PRINT IN INK

(1) OWNER:
Name Atlas Precious Metal, Inc.
Address
City State

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☒
Threaded ☒ Welded ☒
10 " Diam. from +2 ft. to 99 ft. Gauge .250
6 " Diam. from +2 ft. to 245 ft. Gauge Sch. 80

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☐ Yes ☐ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name Aardvark
Type P.V.C. Sch. 80 Model No.
Diam. 6" Slot Size .020 Set from 380 ft. to 420 ft.
Diam. 325-355 Slot Size Set from 145 ft. to 255 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Air test 150 gal./min. with drill stem at 420 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☐
Well seal—Material used Bent. & Cement Grout
Well sealed from land surface to 18 ft.
Diameter of well bore to bottom of seal 12 1/4 in.
Diameter of well bore below seal 9 7/8 in.
Number of sacks of cement used in well seal 10 sacks
How was cement grout placed? Pressure Grout
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☒ Yes ☐ No Size of gravel: No. 8
Gravel placed from 100 ft. to 245 ft.

(10) LOCATION OF WELL:
County Molhuer Driller's well number 9256
NW ¼ NE ¼ Section 5 T. 22S R. 44E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing
Depth drilled ft. Depth of completed well ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Overburden w/ Boulders	0	17	0
Clay Brown	17	140	0
Sandstone w/ Blue Clay	140	255	40
Blue Clay	255	320	40
Sandstone w/ Blue Clay	320	355	40
Blue Clay	355	380	40
Fruited Hard Sandstone	380	415	40
Blue Clay	415	425	40

Work started 12-5 19 88 Completed 12-10 19 88
Date well drilling machine moved off of well 12-11 19 88

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Date 12-15, 1988

Bonded Water Well Constructor Certification:
Bond BD7900518665 (number) Issued by: Allied Surety Company Name
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Bill Doty Drilling Co., Inc. (Type or print)
Address 25497 Freeze Out Rd. Caldwell, ID 83605
[Signed] Water Well Constructor
Date 12-14, 1988

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*45292-690

RECEIVED

MAY 1 1989

WATER RESOURCES DEPT.

SALEM, OREGON

MALH 2511

22S/44E/5ab

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Prod-1 / MALH 2275, 2511

(START CARD) # 9256

(1) OWNER:

Well Number:

Name Atlas Precious Metals

Address 743 Horizin Ct. Suite 202

City Grand Junction State Co Zip 81506

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☒ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☒ Other Auger

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well ____ ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12"	0	18				
10	18	425				
			Cement grout	0	26	19

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material [redacted]. & Cement Grout

Gravel placed from 100 ft. to 245 ft. Size of gravel NO. 8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	99	.250	☒	☐	☒	☐
	6"	+2	245	Sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☒ Screens Type AARDVARK Material PVC Sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.020		6"		☐	☐
145	255	325-355				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100	40'	300	1 hr.

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' " Longitude ____ ' "

Township 22S N or S, Range 44E E or W, WM.

Section 5 NW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

40' ft. below land surface. Date 12-8-88

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 40'

From	To	Estimated Flow Rate	SWL
140-~~255~~	255	30 gpm	
320	355	50 gpm	
380	415	150 gpm	

(12) WELL LOG:

Ground elevation ____

Material	From	To	SWL
Overburden w/ boulders	0	17	0
Clay brown	17	140	0
Sandstone w/ blue clay	140	255	40
blue clay	255	320	40
Sandstone w/ blue clay	320	355	40
Blue clay	355	380	40
Fruited hard sandstone	380	415	40
Blue clay	415	425	40
=			
12-5-88 - 12-10-88			
+==========			
Redone surface seal to 26 feet using method 2 referring to letter sent January 9, 1989			
Drilled around 10" casing to the depth of 26' using method C pumped 19 sacks of cement down hole			
3-30-89 - 3-31-89			
==========			
Incorporated to singel log per state request			

Date started 12-5-88 Completed 3-31-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Bob Doty WWC Number 1202 Date 4-15-89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed Bob Doty for Bill Doty WWC Number 325 [redacted] Date 4/15/89

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PW-1 / MALH 2276

JAN 02 1990

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

WATER RESOURCES DEPT
SALEM, OREGON

malh 2276

22s/44E/8ad

(START CARD) # W-14816

(1) OWNER:

Well Number:

Name Atlas Precious Metals Inc

Address 318 A St.

City Vale State OR Zip 97818

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☑ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☑ No Depth of Completed Well 420 ft.

Explosives used ☐ Yes ☑ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14 3/4	0	28	PT Cement	0	28	19
			VOLCLAY	300	SURFACE	40 Sacks
			BENT PELLETS	295	300	3 BUCKETS

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other Tremie

Backfill placed from ft. to ft. Material

Gravel placed from 555 ft. to 295 ft. Size of gravel .030

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+2	320	.250	☑	☐	☑	☐
	6"	340	400	"	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☑ Screens Type WIRE WOUND Material LOW CARBON

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	340	.030			6"	☐	☑
400	420	.030			6"	☐	☑
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
35		294	1 hr.

Temperature of water 64° F Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ' " Longitude ' "

Township 22S N or S, Range 44E E or W, WM.

Section 8 SE ¼ NE ¼

Tax Lot Lot Block Subdivision

Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:

52 ft. below land surface. Date 12-6-89

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found

From	To	Estimated Flow Rate	SWL
320	340	20	
400	420	20	
		40	

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
SOIL	0	2	
CLAY	2	10	
BASALT	10	28	
BROWN CLAY	28	55	
SILTSTONE	55	130	
CLAY & GRAVEL	130	173	
CLAY & SAND	173	190	
BASALT	190	315	
BROWN CLAY	315	323	
BROWN CLAY & SAND	323	360	
BROWN SANDSTONE	360	395	
BLACK & RED SAND	395	408	
SANDSTONE COARSE	408	441	
CLAY & GRAVEL	441	447	
CLAY & SAND	447	555	

Date started 11/27/89 Completed 12-1-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 544

Signed Larry Bird Date 12/1/89

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PW-4 / MALH 2206

JAN 02 1990

WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2206

21S/44E/32bd
W-14815

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # ~~W-14811~~

(1) OWNER:

Well Number: PW-4

Name: ATLAS PRECIOUS METALS

Address: 318 A STREET WEST

City: VALE State: OR Zip: 97918

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 375 ft.

Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14 3/4	0	40	PORTLAND CEMENT	0	40	19
9 7/8	40	375	VOLCLAY	5	275	40
			CEMENT	0	5	

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from 375 ft. to 370 ft. Material 10-20 MESH

Gravel placed from 370 ft. to 275 ft. Size of gravel 10-20 MESH

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	0	40	.250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	6 5/8"	0	280	.250	☐	☐	☐	☐
	6 5/8"	300	340	.250	☒	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☒ Screens Type WIRE WOUND Material Low Carbon Steel

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
280	300	.030		6"		☐	☒
340	360	.030		6"		☐	☒
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100		350	1 hr.

Temperature of water 62°F Depth Artesian Flow Found —

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☒ Odor ☐ Colored ☐ Other

Depth of strata: 280 STILL USABLE

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude Longitude

Township 21S N or S, Range 44E E or W, WM.

Section 32 SE ¼ NW ¼

Tax Lot Lot Block Subdivision

Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:

81 ft. below land surface. Date 11/17/89

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 280'

From	To	Estimated Flow Rate	SWL
280	360	100 gpm	81

(12) WELL LOG:

Ground elevation ≅ 3350

Material	From	To	SWL
Alluvium	0	25'	
Clay	25	150'	
Sandy clay	150	175	
Sandstone	175	215	
Clay	215	275	
Sandstone	275	305	
Clay	305	325	
Sandstone and Conglomerate	325	365	
Clay.	365	375	

Date started 11/16/89 Completed 11/20/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed [signature] John L Rugg Date 11/20/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 544

Signed Larry Burd Date 11-20-89

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Table C3. Vibrating Wire Piezometer Completions

Well	Level	Easting (Oregon State Plane South, ft)	Northing (Oregon State Plane South, ft)	Surface Elevation (square pedistal)	Azimuth	Inclination	Bore Length From Surface	Vertical Distance from Surface (feet from datum)	Sensor Elevation (feet amsl)	Most Recent Pressure (PSI, 9/26/18 for all except 17-30 = 9/21/18)	Most Recent Wate Level Elevation (feet, 9/26/18 for all except 17-30 = 9/21/18)
GM17-16	TOP	5,752,272.77	745,783.80	3,896.75	352.00	-65.00					
GM17-16	SHALLOW	5,752,234.86	745,990.42				500.00	453.15	3,443.59	-4.170	
GM17-16	INTERMEDIATE	5,752,206.52	746,144.89				870.00	788.49	3,108.26	27.289	3,171.30
GM17-16	DEEP	5,752,204.17	746,157.69				900.00	815.68	3,081.07	39.212	3,171.65
GM17-20	TOP	5,752,500.97	745,969.25	3,837.87	350.00	-80.00					
GM17-20	SHALLOW	5,752,487.66	746,029.82				358.00	352.56	3,485.30	-1.954	
GM17-20	INTERMEDIATE	5,752,472.41	746,099.19				769.00	757.32	3,080.55	28.612	3,146.64
GM17-20	DEEP	5,752,470.05	746,109.93				829.00	816.41	3,021.46	52.689	3,143.17
GM17-21	TOP	5,752,306.98	746,206.48	3,811.83	154.00	-70.00					
GM17-21	SHALLOW	5,752,388.33	746,056.01				499.00	468.91	3,342.92	-2.872	
GM17-21	INTERMEDIATE	5,752,429.24	745,980.33				750.00	704.77	3,107.06	0.545	3,108.32
GM17-21	DEEP	5,752,437.33	745,965.37				801.00	752.69	3,059.14	-0.984	
GM17-28	TOP	5,751,976.26	746,149.50	3,828.63	152.00	-52.00					
GM17-28	SHALLOW	5,752,122.54	745,900.14				469.00	369.58	3,459.05	-2.868	
GM17-28	INTERMEDIATE	5,752,210.10	745,750.87				750.00	591.01	3,237.62	-0.162	
GM17-28	DEEP	5,752,235.41	745,707.73				831.00	654.84	3,173.79	-0.158	
GM17-30	TOP	5,752,354.31	745,904.93	3,856.68	320.00	-77.00					
GM17-30	SHALLOW	5,752,276.07	745,990.62				517.00	503.75	3,352.93	-0.195	
GM17-30	INTERMEDIATE	5,752,239.65	746,030.51				758.00	738.57	3,118.11	23.033	3,171.31
GM17-30	DEEP	5,752,234.93	746,035.68				789.00	768.78	3,087.90	-6.104	

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-10	GM17-28	shallow - 470 intermediate - 750 deep - 830	shallow - 392 intermediate - 112 deep - 31	862	6	Y	40		--	--	--		see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-10		GM17-28	1	-					
			2	-					
				-					
				-					
				-					
TOTALs									

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER			
1	1ST WATER =	**1 BATCH =**	30 GAL
2	2ND CEMENT =		1 BAG (94 lb)
3	3RD BENTONITE =		1/2 BAG (25 lb)

6" hole - 1.5 gal/ft
4" hole - 0.65 gal/ft

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-14	5/11/17	GM17-16	1	-	10; 100'	60	2	1	fluid; v. liquid
	5/11/17		2	-	20; 200'	120	4	2	
	5/11/17		3	-	-	120	4	2	
	5/11/17		4	-	-	120	4	2	
	5/11/17		5	-	-	120	4	2	
TOTALs						540	18	9	

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-14	GM17-16	shallow - 497 intermediate - 868 deep - 899	shallow - 423 intermediate - 52 deep - 21	920	8	N	--	cleaned, competent	1,000	--	--	923	see grouting form		

Borehole Grouting Field Form



MIX ORDER

1 1ST WATER =
2 2ND CEMENT =
3 3RD BENTONITE =

1 BATCH = 30 GAL
1 BAG (94 lb)
1/2 BAG (25 lb)

6" hole - 1.5 gal/ft
4" hole - 0.65 gal/ft

Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
7-30	6-9-17	P17-17	1	120	2-10'	240	8	4	Very Thick
-30	6-9-17	P17-17	2	? 0	20-10'	240	8	4	Very Thick

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-18	GM17-21	shallow - 499 intermediate - 750 deep - 801	shallow - 333 intermediate - 82 deep - 31	832	6	Y	Bottom 200'	cleaned, competent	--	--	--		see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-18	5/23/17	GM17-21	1	-					Major notes thicker consistency
			2	-					
				-					
				-					
				-					
TOTALs									

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-20	GM17-20	shallow - 358 intermediate - 768 deep - 829	shallow - 497 intermediate - 87 deep - 26	855	6	Y	--	cleaned, competent	--	--	--	850 ft	see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-20	5/9/2017 17:40	GM17-20	1	100	11; (110 ft)	60	2	1.5	
	5/9/2017 19:45		2	--	--	240	8	4	
			3	--	--	150	5	2.5	
TOTALs						450	15	8	

Appendix D
Well Hydrographs

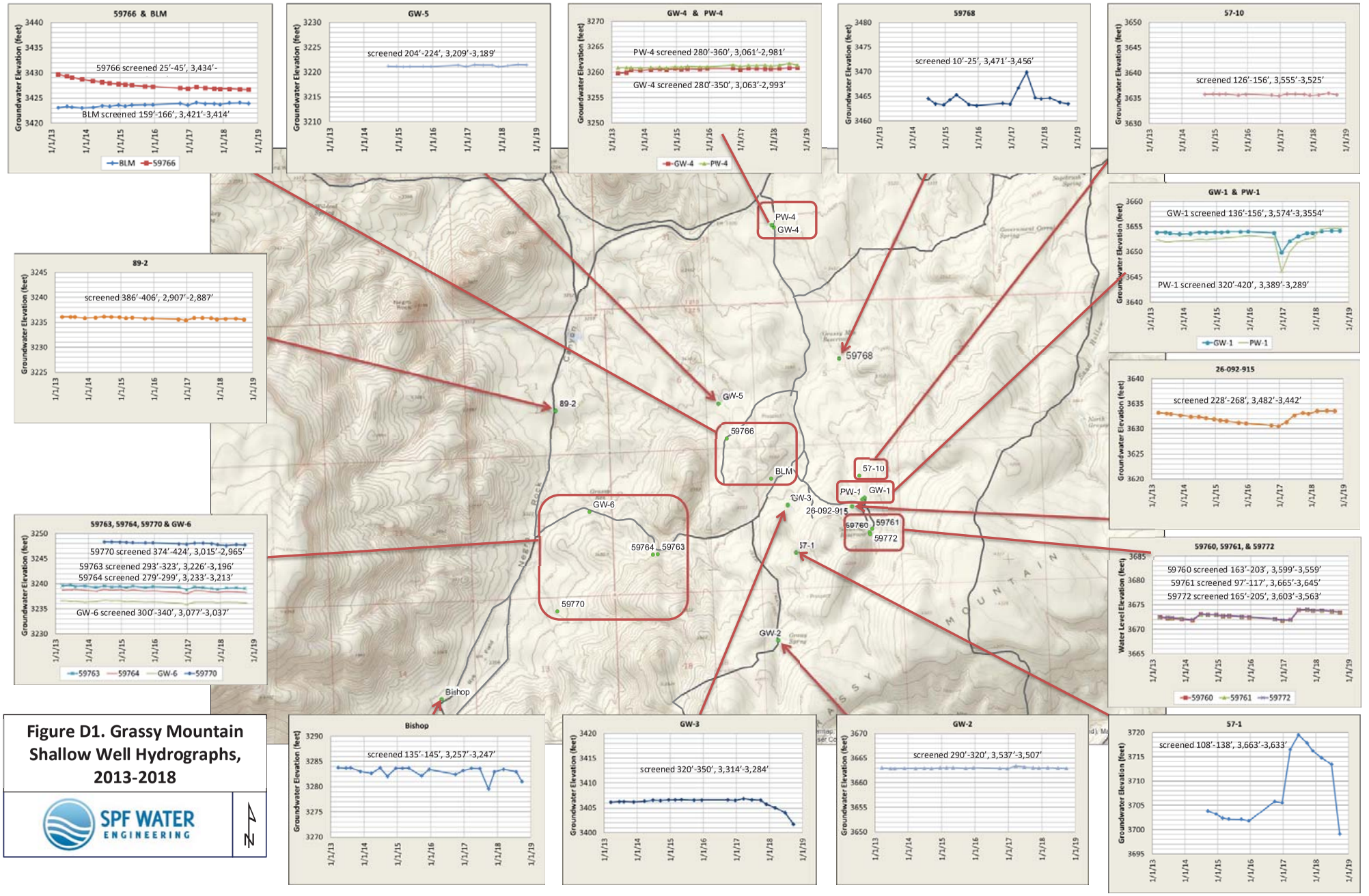
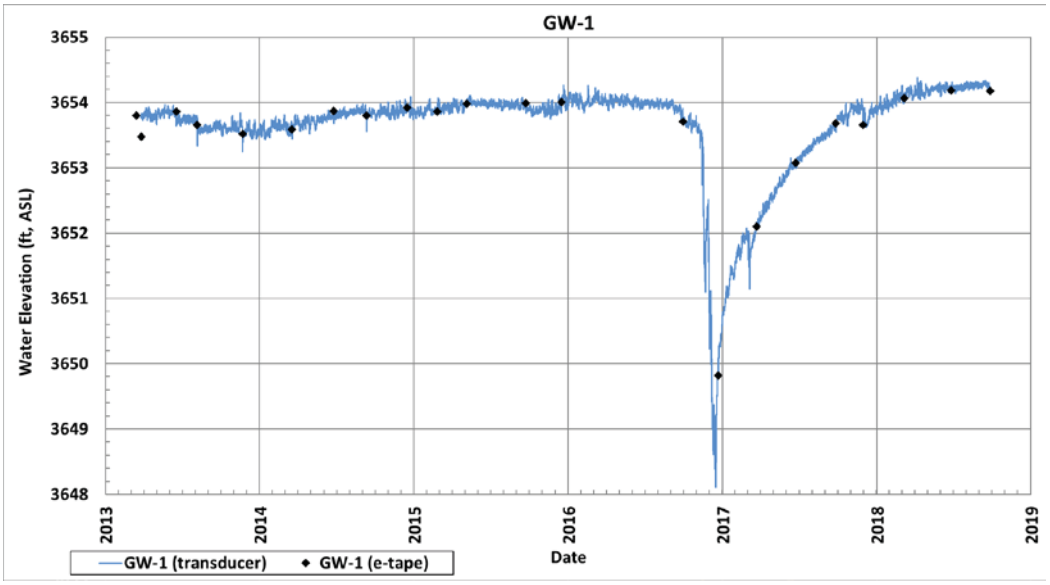
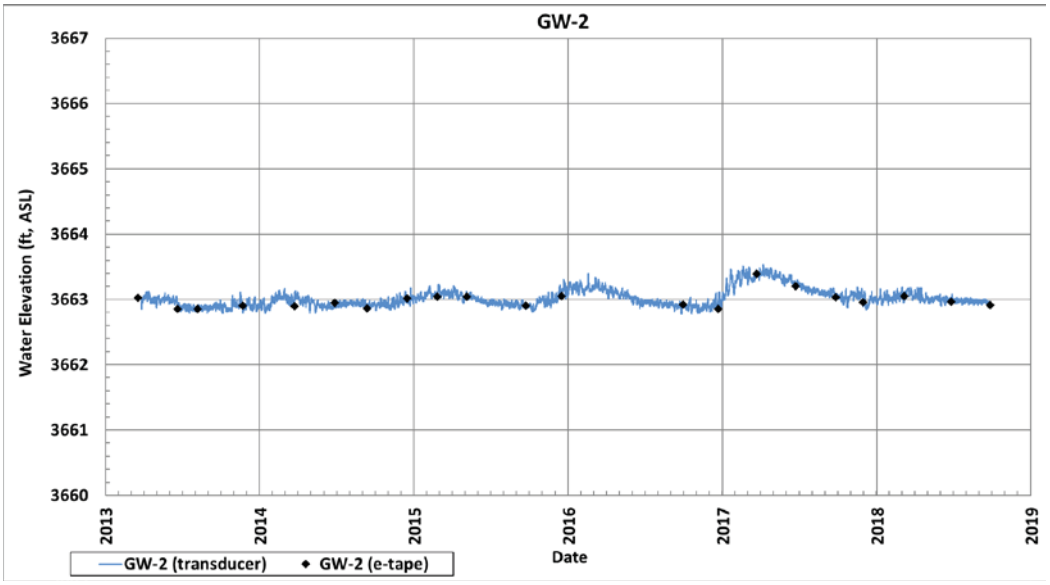


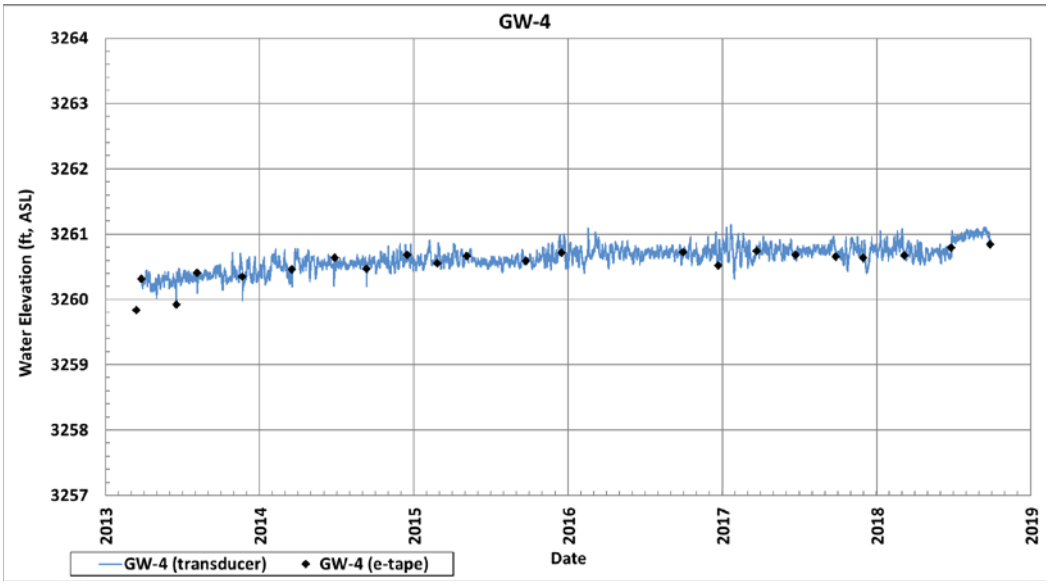
Figure D1. Grassy Mountain Shallow Well Hydrographs, 2013-2018

SPF WATER ENGINEERING

Figure D2. Shallow Well Transducer and Hand Measurement Hydrographs







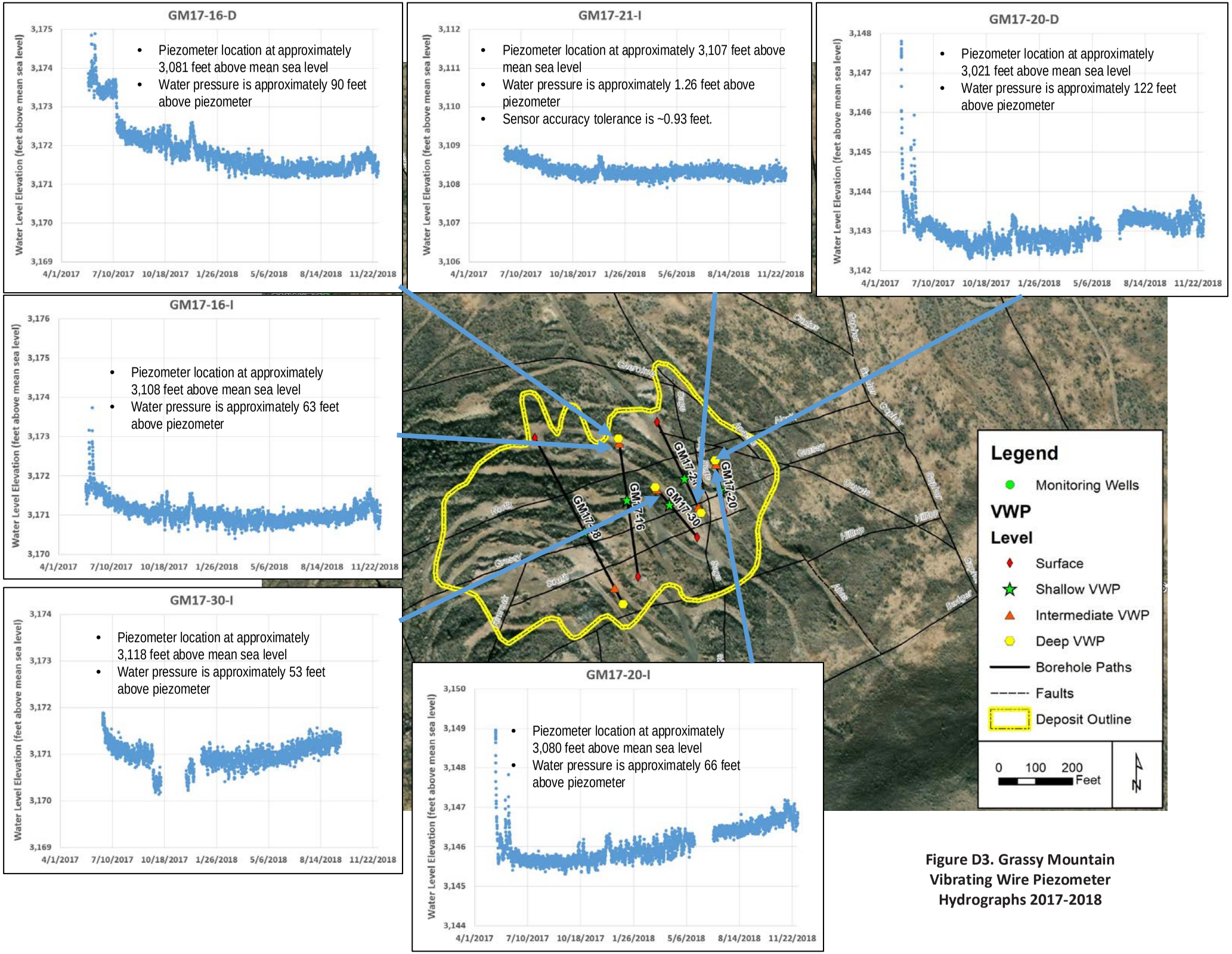
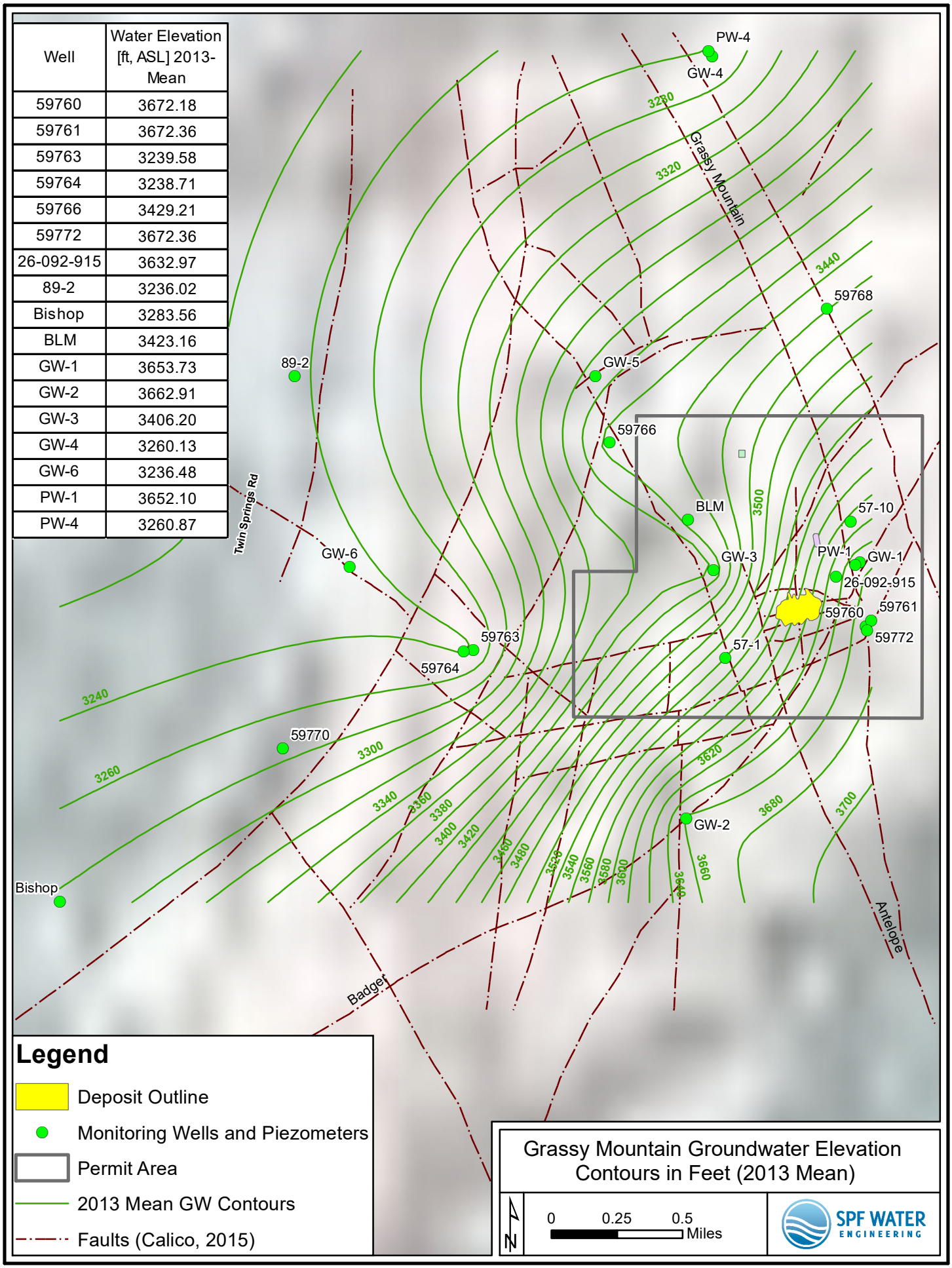
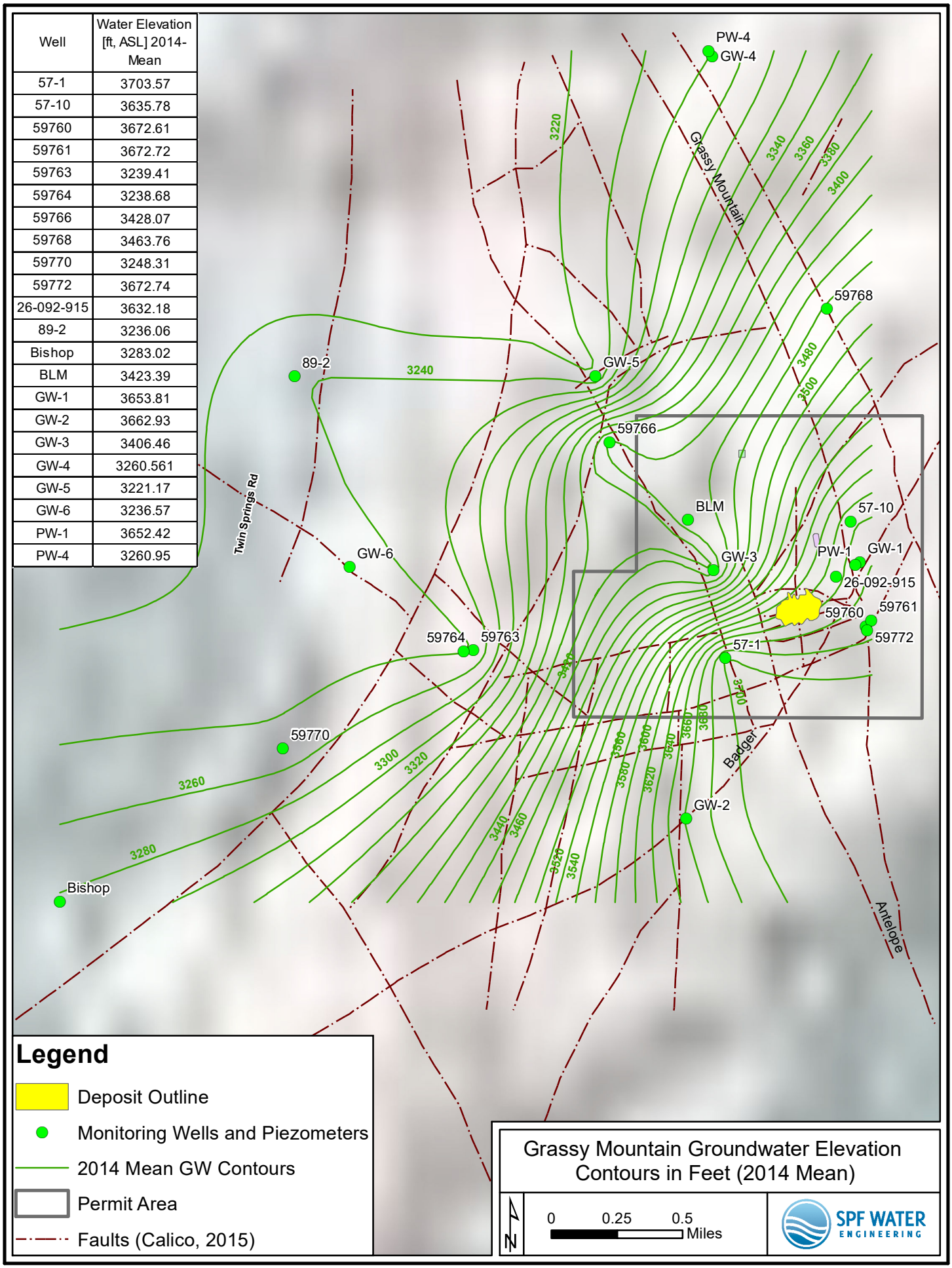


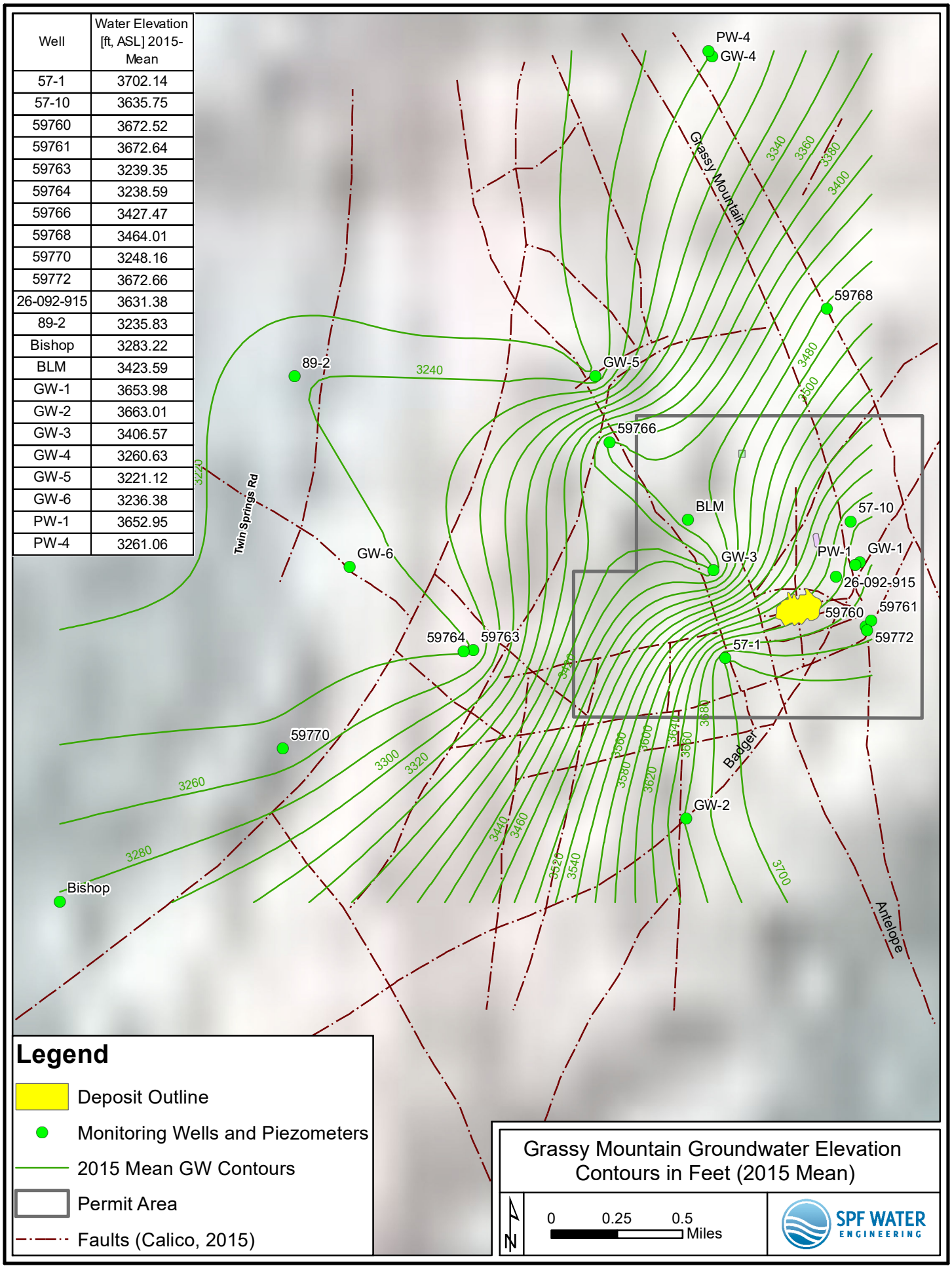
Figure D3. Grassy Mountain Vibrating Wire Piezometer Hydrographs 2017-2018

Appendix E
Groundwater Elevation Contour Maps


Well | Water Elevation [ft, ASL] 2013-Mean
59760 | 3672.18
59761 | 3672.36
59763 | 3239.58
59764 | 3238.71
59766 | 3429.21
59772 | 3672.36
26-092-915 | 3632.97
89-2 | 3236.02
Bishop | 3283.56
BLM | 3423.16
GW-1 | 3653.73
GW-2 | 3662.91
GW-3 | 3406.20
GW-4 | 3260.13
GW-6 | 3236.48
PW-1 | 3652.10
PW-4 | 3260.87
PW-4
GW-4
3280
3320
Grassy Mountain
3440
59768
89-2
GW-5
59766
BLM
3500
57-10
Twin Springs Rd
GW-6
GW-3
PW-1
GW-1
26-092-915
59760
59761
59772
59763
59764
57-1
3240
59770
3260
3300
3340
3360
3380
3400
3420
3460
3480
3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
GW-2
Bishop
Antelope
Badger
Legend
Deposit Outline
Monitoring Wells and Piezometers
Permit Area
2013 Mean GW Contours
Faults (Calico, 2015)
Grassy Mountain Groundwater Elevation Contours in Feet (2013 Mean)
N
0
0.25
0.5
Miles
SPF WATER ENGINEERING

Well	Water Elevation [ft, ASL] 2014-Mean
57-1	3703.57
57-10	3635.78
59760	3672.61
59761	3672.72
59763	3239.41
59764	3238.68
59766	3428.07
59768	3463.76
59770	3248.31
59772	3672.74
26-092-915	3632.18
89-2	3236.06
Bishop	3283.02
BLM	3423.39
GW-1	3653.81
GW-2	3662.93
GW-3	3406.46
GW-4	3260.561
GW-5	3221.17
GW-6	3236.57
PW-1	3652.42
PW-4	3260.95





Well	Water Elevation [ft, ASL] 2015-Mean
57-1	3702.14
57-10	3635.75
59760	3672.52
59761	3672.64
59763	3239.35
59764	3238.59
59766	3427.47
59768	3464.01
59770	3248.16
59772	3672.66
26-092-915	3631.38
89-2	3235.83
Bishop	3283.22
BLM	3423.59
GW-1	3653.98
GW-2	3663.01
GW-3	3406.57
GW-4	3260.63
GW-5	3221.12
GW-6	3236.38
PW-1	3652.95
PW-4	3261.06

Legend

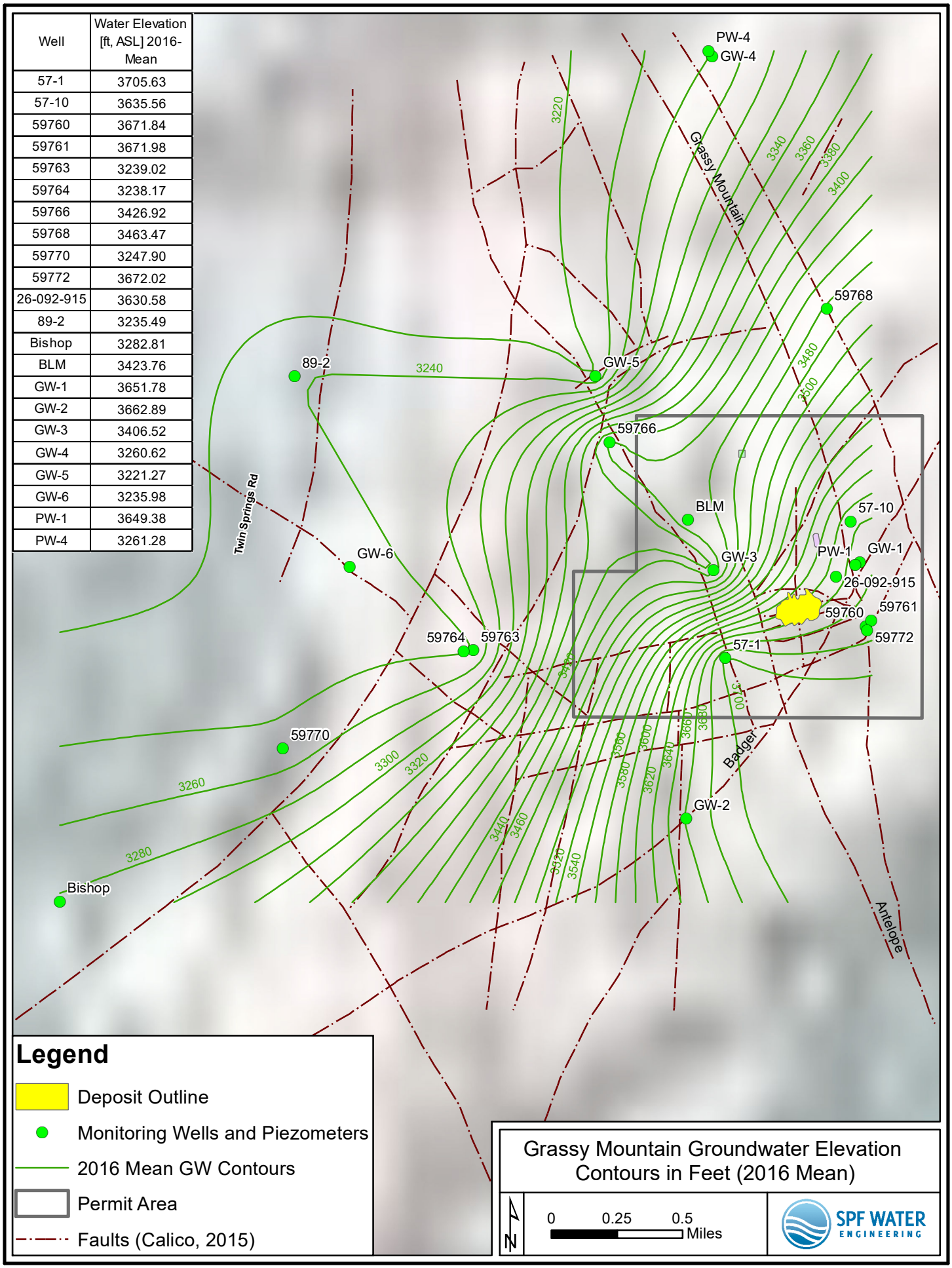
- Deposit Outline
- Monitoring Wells and Piezometers
- 2015 Mean GW Contours
- Permit Area
- Faults (Calico, 2015)

Grassy Mountain Groundwater Elevation Contours in Feet (2015 Mean)

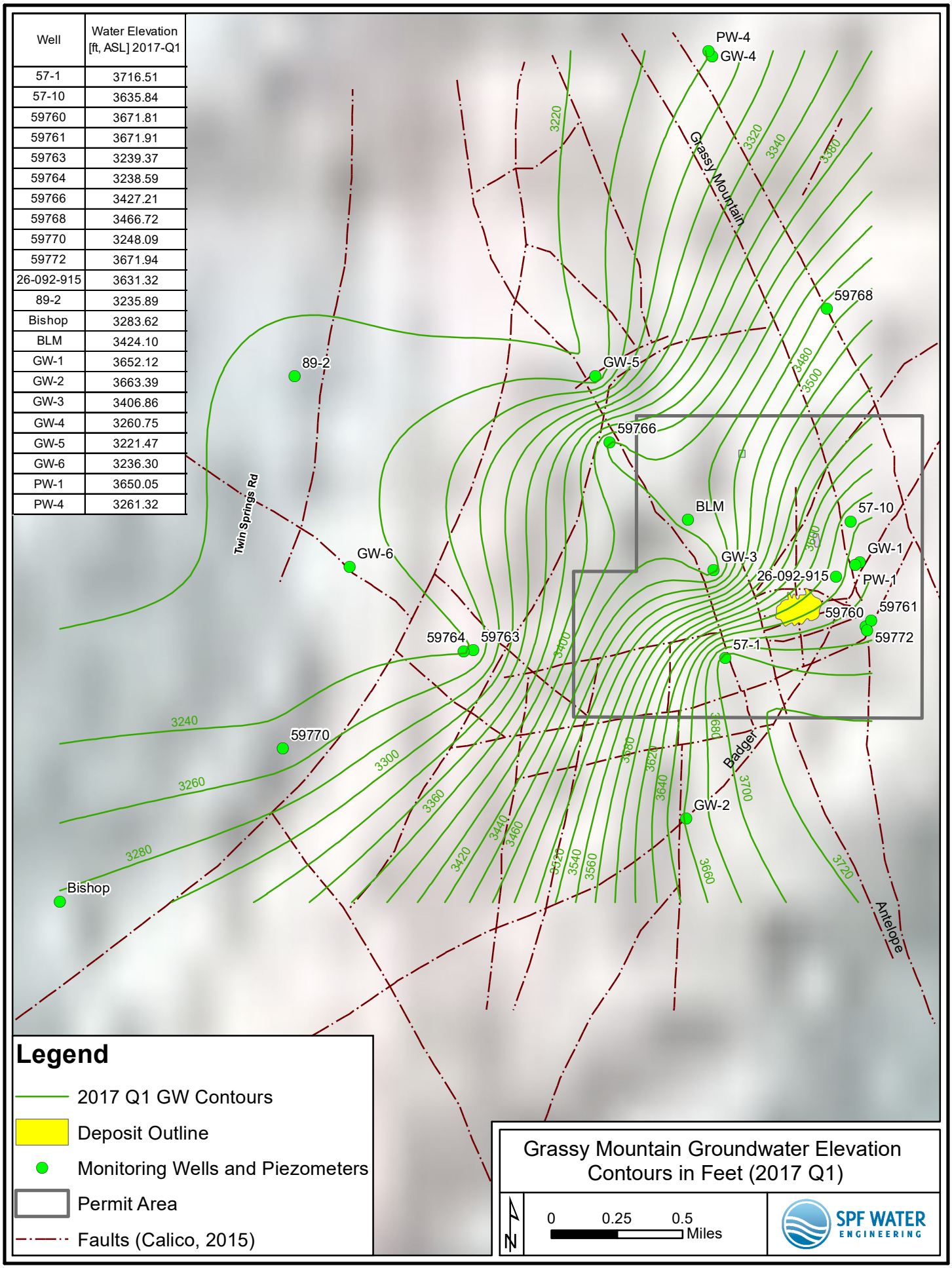
N

0 0.25 0.5 Miles

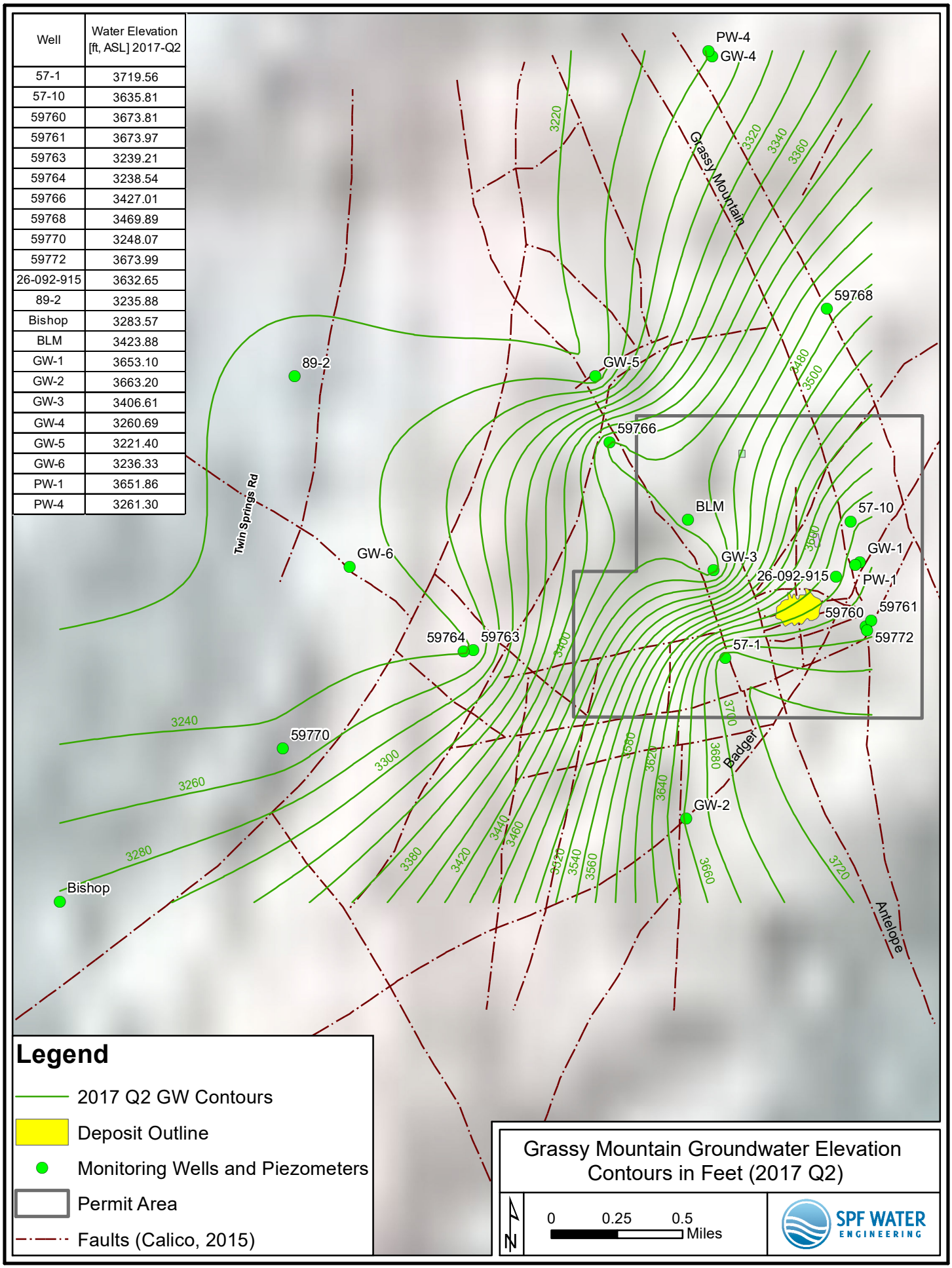
SPF WATER ENGINEERING



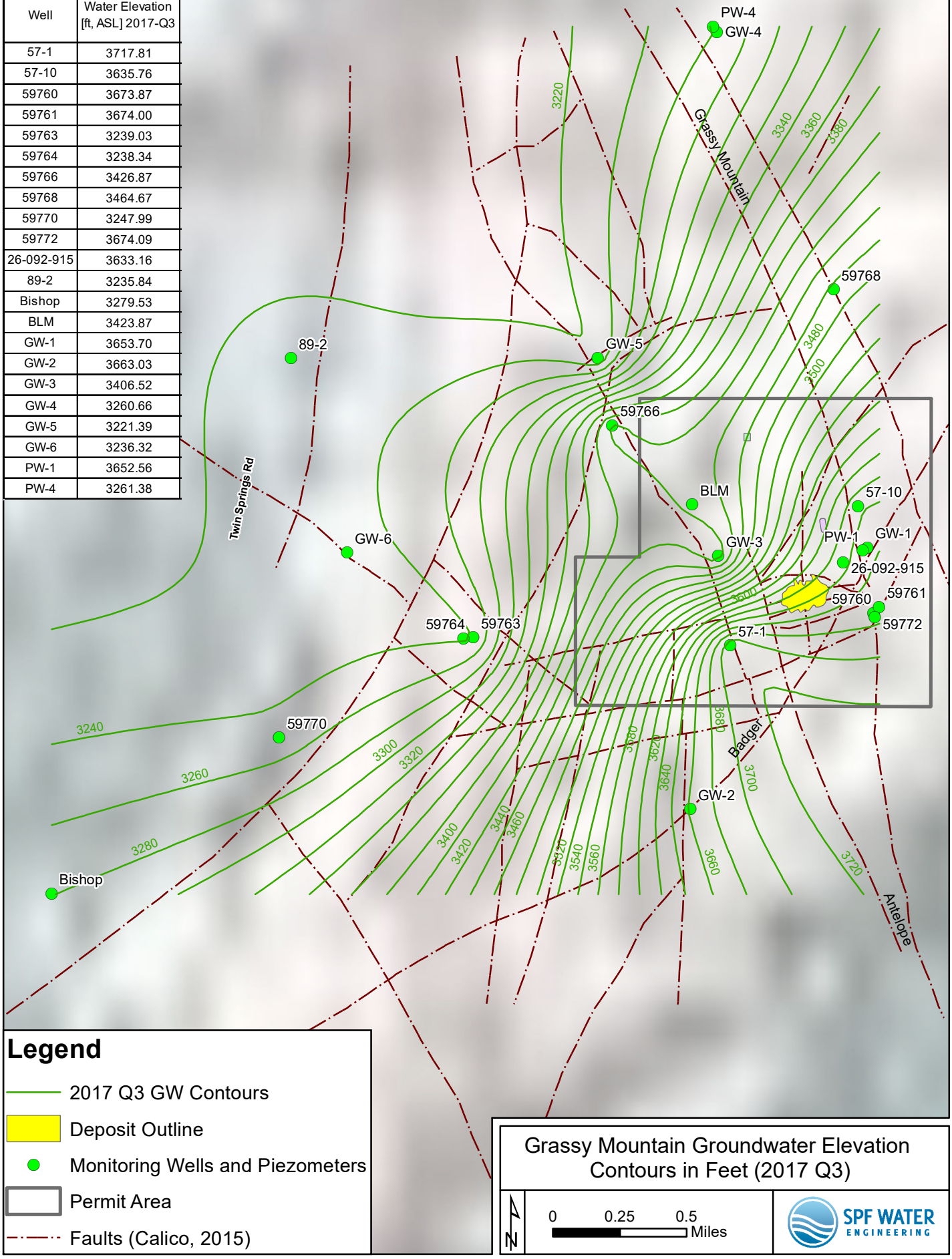
Well	Water Elevation [ft, ASL] 2016-Mean
57-1	3705.63
57-10	3635.56
59760	3671.84
59761	3671.98
59763	3239.02
59764	3238.17
59766	3426.92
59768	3463.47
59770	3247.90
59772	3672.02
26-092-915	3630.58
89-2	3235.49
Bishop	3282.81
BLM	3423.76
GW-1	3651.78
GW-2	3662.89
GW-3	3406.52
GW-4	3260.62
GW-5	3221.27
GW-6	3235.98
PW-1	3649.38
PW-4	3261.28

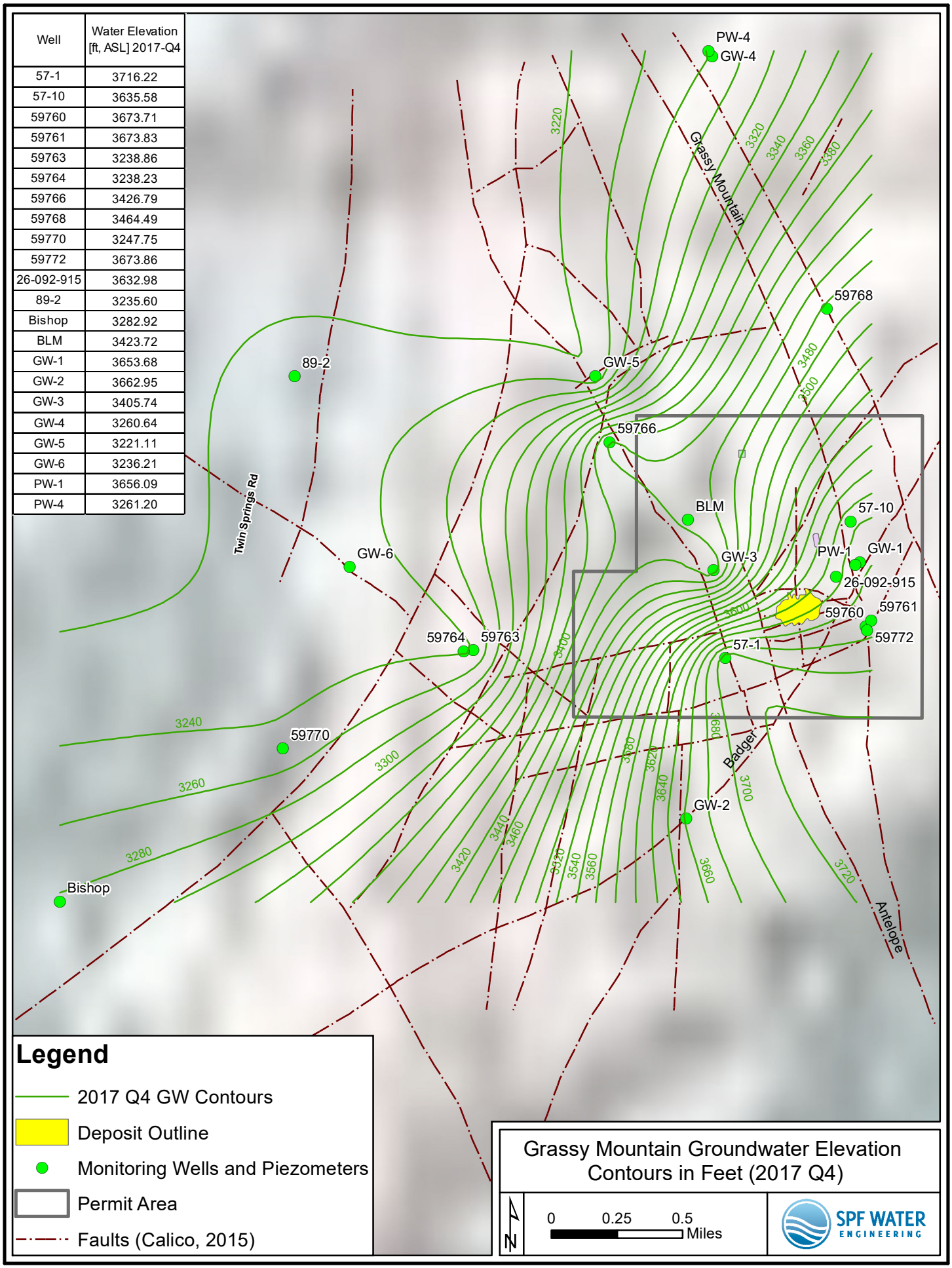

Well | Water Elevation [ft, ASL] 2017-Q1
57-1 | 3716.51
57-10 | 3635.84
59760 | 3671.81
59761 | 3671.91
59763 | 3239.37
59764 | 3238.59
59766 | 3427.21
59768 | 3466.72
59770 | 3248.09
59772 | 3671.94
26-092-915 | 3631.32
89-2 | 3235.89
Bishop | 3283.62
BLM | 3424.10
GW-1 | 3652.12
GW-2 | 3663.39
GW-3 | 3406.86
GW-4 | 3260.75
GW-5 | 3221.47
GW-6 | 3236.30
PW-1 | 3650.05
PW-4 | 3261.32
PW-4
GW-4
Grassy Mountain
59768
89-2
GW-5
59766
Twin Springs Rd
BLM
57-10
GW-6
GW-3
GW-1
26-092-915
PW-1
59760
59761
59764
59763
57-1
59772
59770
Badger
GW-2
Bishop
Antelope
3220
3240
3260
3280
3300
3320
3340
3360
3380
3400
3420
3440
3460
3480
3500
3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
3720
Legend
2017 Q1 GW Contours
Deposit Outline
Monitoring Wells and Piezometers
Permit Area
Faults (Calico, 2015)
Grassy Mountain Groundwater Elevation Contours in Feet (2017 Q1)
N
0
0.25
0.5
Miles
SPF WATER ENGINEERING

Well	Water Elevation [ft, ASL] 2017-Q2
57-1	3719.56
57-10	3635.81
59760	3673.81
59761	3673.97
59763	3239.21
59764	3238.54
59766	3427.01
59768	3469.89
59770	3248.07
59772	3673.99
26-092-915	3632.65
89-2	3235.88
Bishop	3283.57
BLM	3423.88
GW-1	3653.10
GW-2	3663.20
GW-3	3406.61
GW-4	3260.69
GW-5	3221.40
GW-6	3236.33
PW-1	3651.86
PW-4	3261.30



Well	Water Elevation [ft, ASL] 2017-Q3
57-1	3717.81
57-10	3635.76
59760	3673.87
59761	3674.00
59763	3239.03
59764	3238.34
59766	3426.87
59768	3464.67
59770	3247.99
59772	3674.09
26-092-915	3633.16
89-2	3235.84
Bishop	3279.53
BLM	3423.87
GW-1	3653.70
GW-2	3663.03
GW-3	3406.52
GW-4	3260.66
GW-5	3221.39
GW-6	3236.32
PW-1	3652.56
PW-4	3261.38





Well	Water Elevation [ft, ASL] 2017-Q4
57-1	3716.22
57-10	3635.58
59760	3673.71
59761	3673.83
59763	3238.86
59764	3238.23
59766	3426.79
59768	3464.49
59770	3247.75
59772	3673.86
26-092-915	3632.98
89-2	3235.60
Bishop	3282.92
BLM	3423.72
GW-1	3653.68
GW-2	3662.95
GW-3	3405.74
GW-4	3260.64
GW-5	3221.11
GW-6	3236.21
PW-1	3656.09
PW-4	3261.20

Appendix F
Water Quality, Well Water Level, and Spring Flow Data

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 1 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		59760								59761							59762	59763								59766						
Analytes	**MCL**	3/26/13	6/18/13	8/8/13	11/24/13	3/24/14	3/24/14	6/25/14	9/11/14	3/18/13	6/18/13	8/6/13	11/21/13	3/18/14	6/27/14	9/15/14	12/6/17	3/18/13	6/18/13	8/7/13	11/24/13	3/24/14	6/27/14	9/15/14	9/15/14	3/14/13	6/17/13	8/8/13	11/24/13	3/18/14	6/25/14	9/11/14
Aluminum, dissolved	0.05*	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	0.04
Aluminum, total	0.05*	**0.12**	<0.03	**0.15**	**0.37**	**0.37**	**0.59**	**0.22**	**0.74**	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**3.37**	**2.07**	**0.1**	0.05	**0.14**	**0.12**	<0.03	**0.09**	**0.12**	**25.6**	**8.36**	**1.84**	**3.7**	**2.9**	**4.36**	**7.26**
Antimony, dissolved	0.006	0.0005	0.0005	0.0006	0.0009	0.0005	0.0005	0.0008	0.0006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	**0.298**	0.0006	0.0007	0.0006	0.0005	0.0005	0.0006	0.0005	0.0005	<0.0004	0.0005	0.0005	0.0006	<0.0004	0.0006	0.0007
Antimony, total	0.006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0006	0.0006	0.0005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0008	**0.21**	0.0007	0.0009	0.0007	0.0007	0.0006	0.0007	0.0006	0.0006	0.0005	0.0007	0.0007	0.0019	0.0006	0.0008	0.0009
Arsenic, dissolved	0.010	**0.0278**	**0.0263**	**0.0237**	**0.0285**	**0.0221**	**0.0282**	**0.0268**	**0.0271**	**0.0246**	**0.0234**	**0.0243**	**0.024**	**0.0227**	**0.0228**	**0.0223**	**0.018**	**0.0839**	**0.0609**	**0.0643**	**0.0713**	**0.0688**	**0.0578**	**0.0621**	**0.066**	**0.204**	**0.2094**	**0.1836**	**0.1958**	**0.1887**	**0.187**	**0.1644**
Arsenic, total	0.010	**0.0283**	**0.0268**	**0.0267**	**0.0275**	**0.0251**	**0.0245**	**0.0268**	**0.0258**	**0.0241**	**0.024**	**0.024**	**0.0244**	**0.0219**	**0.0228**	**0.0232**	**0.163**	**0.0787**	**0.0606**	**0.06**	**0.0658**	**0.0614**	**0.0624**	**0.0664**	**0.0669**	**0.276**	**0.259**	**0.206**	**0.202**	**0.191**	**0.1847**	**0.1927**
Barium, dissolved	2	0.053	0.054	0.051	0.059	0.048	0.046	0.055	0.051	0.048	0.047	0.043	0.045	0.037	0.041	0.047	0.016	0.024	0.029	0.022	0.028	0.02	0.024	0.026	0.026	0.017	0.02	0.02	0.019	0.014	0.017	0.018
Barium, total	2	0.052	0.052	0.052	0.061	0.056	0.055	0.057	0.054	0.043	0.045	0.046	0.047	0.045	0.042	0.043	0.043	0.056	0.028	0.028	0.025	0.028	0.022	0.023	0.023	0.456	0.183	0.044	0.069	0.057	0.077	0.118
Beryllium, dissolved	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	0.00005	0.00006	0.00005	<0.00005	<0.00005
Beryllium, total	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0001	0.00057	0.00012	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00302	0.0013	0.00023	0.00041	0.00042	0.00054	0.00066
Bicarbonate as CaCO3	NA	156	132	138	144	116	132	115	146	147	143	148	163	128	127	156	134	202	185	189	198	166	162	203	210	96	95	92	91	76	75	95.2
Bismuth, dissolved	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bismuth, total	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Boron, dissolved	NA	0.074	0.06	0.07	0.09	0.07	0.08	0.08	0.08	0.068	0.06	0.07	0.07	0.06	0.07	0.07	0.19	0.151	0.15	0.15	0.18	0.17	0.17	0.17	0.17	0.106	0.15	0.14	0.16	0.12	0.15	0.15
Boron, total	NA	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.08	0.07	0.07	0.07	0.2	0.15	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.13	0.12	0.14	0.15	0.14	0.13	0.15
Cadmium, dissolved	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmium, total	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0009	0.0005	0.0002	0.0003	0.0002	0.0003	0.0005
Calcium, dissolved	NA	43.5	39	39.8	40.5	38.4	38.8	39.3	39.4	42.9	41.7	41.9	42.2	37.4	41.4	41.5	79.9	52.7	49.6	56.4	54.3	51.1	53.5	54.3	54.4	37.7	40.7	40.2	40.1	34.4	39.7	40
Calcium, total	NA	40.8	40	40.4	40	38.5	39	38.5	41.6	44	43.1	43.4	42.6	43.6	43.4	42.1	81.9	48.4	53.2	58.6	54.3	51.4	55.2	55.6	54.7	49.8	42.7	40.9	41.5	40.5	41	42.9
Carbonate as CaCO3	NA	<2	9	<2	<2	<2	<2	3	<2	<2	8	<2	<2	<2	<2	<2	<2	4	11	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloride	250*	9.46	9.84	9.87	9	9.13	9.57	9.23	8.73	13.31	14.2	14.3	13.4	13.6	13.3	12.9	15.1	22.7	20.3	19.7	18.5	19.6	19.9	18.2	12.1	12.43	12.8	12.9	12	12.2	12.7	11.3
Chromium, dissolved	0.1	0.0007	0.0009	0.0007	0.0008	0.0006	0.0007	0.001	0.0008	0.001	0.0022	0.001	0.001	0.0009	0.0011	0.0009	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium, total	0.1	0.0009	0.001	0.001	0.001	0.0008	0.0007	0.0013	0.0009	0.0011	0.0013	0.001	0.0012	0.0011	0.0012	0.001	0.0072	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	0.01	0.0055	0.0008	0.0017	0.0013	0.0022	0.003
Cobalt, dissolved	NA	0.00013	0.00008	0.00021	0.00013	0.00011	0.00017	0.00014	0.00033	0.00023	0.00013	0.00015	0.00021	0.00017	0.00016	0.00015	0.0165	0.00033	0.00052	0.00036	0.0003	0.00024	0.00024	0.00025	0.0003	0.00108	0.00156	0.00155	0.00106	0.00086	0.00126	0.00174
Cobalt, total	NA	0.00011	0.00013	0.0002	0.00031	0.00016	0.00017	0.00032	0.00071	0.00026	0.00016	0.00027	0.00029	0.00011	0.00008	<0.0001	0.0199	0.00132	0.00056	0.00024	0.00028	0.0002	0.00023	0.00027	0.00027	0.00857	0.00431	0.00129	0.0016	0.00144	0.00181	0.00261
Conductivity @25C (umhos/cm)	NA	366	379	362	367	371	380	372	374	400	412	408	399	410	405	409	935	1530	1690	1740	1630	1720	1710	1710	1700	883	894	873	879	893	908	907
Copper, dissolved	1.3	0.0035	0.0103	0.0019	0.0049	0.004	0.0062	0.0032	0.0029	<0.0005	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.008	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper, total	1.3	0.0051	0.0131	0.009	0.005	0.008	0.0115	0.007	0.0075	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.005	0.003	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.019	0.0085	0.0015	0.0027	0.002	0.003	0.0047
Cyanide, total	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide, WAD	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Fluoride	4	0.59	0.52	0.53	0.49	0.48	0.5	0.5	0.5	0.6	0.53	0.54	0.51	0.52	0.52	0.5	1.38	1.2	<1	0.98	<1	<1	0.67	0.92	0.66	2.05	1.79	1.78	1.66	1.65	1.41	1.4
Gallium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gallium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hardness as CaCO3	NA	140	125	126	129	122	124	125	126	151	146	145	147	129	145	145		156	145	165	160	150	157	161	161	107	115	113	113	96	111	113
Hardness as CaCO3 (dissolved)	NA																235															
Hardness as CaCO3 (total)	NA																															
Hydroxide as CaCO3	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron, dissolved	0.3*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	0.03	<0.02	0.09	0.09	<0.02	<0.02	<0.02	<0.02	**0.97**	**0.9**	**1.06**	**0.89**	**0.86**	**0.71**
Iron, total	0.3*	0.05	<0.02	0.11	0.29	0.12	0.2	0.22	**0.37**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**4.54**	**1.45**	0.15	0.05	0.2	0.14	0.09	0.08	0.11	**23**	**9.12**	**2.77**	**5.38**	**3.9**	**5.04**	**7.31**
Lead, dissolved	0.015	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead, total	0.015	0.0003	0.0002	0.0006	0.0004	0.0004	0.0007	0.0006	0.0008	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	0.0048	0.0013	0.0006	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	**0.019**	0.0083	0.0016	0.0029	0.0024	0.004	0.0058
Lithium, dissolved	NA	0.05	0.05	0.05	0.06	0.046	0.047	0.052	0.05	0.03	0.04	0.03	0.03	0.03	0.035	0.039	0.209	0.19	0.19	0.19	0.2	0.187	0.196	0.201	0.203	0.56	0.61	0.59	0.57	0.477	0.569	0.57
Lithium, total	NA	0.05	0.06	0.05	0.05	0.055	0.055	0.053	0.049	0.03	0.04	0.04	0.04	0.037	0.034	0.034	0.22	0.18	0.2	0.2	0.18	0.2	0.195	0.198	0.196	0.59	0.58	0.58	0.56	0.543	0.562	0.585
Magnesium, dissolved	NA	7.5	6.6	6.5	6.8	6.4	6.5	6.5	6.6	10.7	10.2	9.9	10.2	8.6	10	10.1	8.5	5.9	5.2	5.9	5.8	5.5	5.8	6.1	6.1	3.1	3.2	3	3.2	2.4	3	3.1
Magnesium, total	NA	7	6.7	6.8	6.8	6.5	6.6	6.2	7.1	10.9	10.4	10.4	10.3	10.4	10.3	10.2	8.7	5.2	5.4	6.3	5.8	5.6	5.9	6.3	6.2	7	4.2	3.3	3.6	3.2	3.5	4.1
Manganese, dissolved	0.05*	0.001	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.535**	0.0286	**0.1974**	**0.1098**	**0.096**	**0.0838**	**0.0856**	**0.0867**	**0.0857**	**0.263**	**0.475**	**0.422**	**0.442**	**0.432**	**0.407**	**0.389**
Manganese, total	0.05*	0.0039	0.0011	0.0057	0.0114	0.0042	0.0061	0.0111	0.0273	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	**0.589**	**0.23**	**0.205**	**0.1179**	**0.1235**	**0.1029**	**0.1007**	**0.0997**	**0.0992**	**0.73**	**0.688**	**0.452**	**0.506**	**0.49**	**0.486**	**0.519**
Mercury, dissolved (ng/L)	2000	<1	0.5	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<1	0.7	<1	<0.2	0.2	0.3	0.3	<0.2	<0.4	0.8	0.3	<0.2	0.4	0.2	0.2	0.2	2.4	4	1.2	1.1	1	1	0.8
Mercury, total (ng/L)	2000	0.9	1.1	0.5	0.7	0.2	0.5	0.6	1	<1	1.2	0.4	0.2	0.6	0.2	0.3	20.4	1.8	2.3	0.8	1.2	0.9	1.8	0.8	0.8	133	40	13	28	12	24	34
Molybdenum, dissolved	NA	0.0029	0.0032	0.0027	0.0031	0.0029	0.0029	0.0032	0.0031	0.0025	0.0028	0.0026	0.0025	0.0026	0.0024	0.0027	0.0117	0.012	0.0126	0.0109	0.0114	0.011	0.0099	0.0113	0.0118	0.0325	0.03	0.0284	0.0281	0.0267	0.0264	0.0251
Molybdenum, total	NA	0.0032	0.0031	0.0031	0.003	0.003	0.003	0.0031	0.0029	0.0028	0.0027	0.0029	0.0027	0.0026	0.0025	0.003	0.0138	0.0138	0.012	0.0115	0.0117	0.0114	0.0107	0.0115	0.0116	0.0342	0.0315	0.0324	0.0269	0.0266	0.0255	0.0263
Nickel, dissolved	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.04	0.0006	0.0015	0.0009	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0055	0.0054	0.0033	0.0027	0.0035	0.0055	0.0057
Nickel, total	NA	0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.001	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.001	0.0454	0.0071	0.0017	0.0009	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0128	0.0094	0.0045	0.0046	0.0049	0.007	0.0091
Nitrate as N, dissolved	10	0.72	<0.02	0.78						1.69	1.17	1.68						<0.02	0.09	<0.02						0.07	0.05	0.04				
Nitrate/Nitrite as N	10			0.74	0.81	0.83	0.78	0.76	0.75			1.51	1.79	1.92	1.73	1.68	<0.02			0.02	<0.02	<0.02	<0.02	<0.02	<0.02			0.04	0.03	0.06	<0.02	<0.02
Nitrate/Nitrite as N, dissolved	10	0.72	<0.02	0.78						1.69	1.17	1.68						<0.02	0.09	<0.02						0.07	0.05	0.04				
Nitrite as N, dissolved	1	<0.01	<0.01	<0.01						<0.01	<0.01	<0.01						<0.01	<0.01	<0.01						<0.01	<0.01	<0.01				
Nitrogen, ammonia	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0.09	<0.05	<0.05	0.12	0.2
pH (standard units)	NA	8.2	8.4	8.2	8.2	8.2	8.2	8.3	8.2	8.3	8.4	8.2	8.3	8.1	8.3	8.2	8.1	8.3	8.4	8.3	8.2	8.2	8.2	8.2	8.2	8	7.9	7.8	7.9	7.7	7.9	7.4
pH measured at (°C)	NA	20	24	19	21	24	24	21	18.9	20	24	21	21	22	22	19.7	21.2	21	24	21	21	23	23	19.6	19.5	20	22	20	21	22	22	19.5
Phosphorus, total	NA	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.05	0.08	0.05	0.05	0.05	0.05	0.05	0.04	0.04	1.67	1.05	0.93	0.91	0.94	0.92	0.84
Potassium, dissolved	NA	7.9	7	7.1	7.6	7.1	7.2	7.2	7.2	6.4	5.8	5.7	6	5.1	5.8	5.9	6.2	26.6	24.3	25.3	26.8	25.6	26.2	25.9	26	9.8	10.3	10.1	10	8.3	9.9	9.7
Potassium, total	NA	7.5	7.4	7.4	7.5	7.2	7.3	7.2	7.5	6.1	6	6.1	6	5.9	5.9	5.9	7.3	25.8	27.5	27.4	26.6	26.3	26.6	26.3	26	14.2	11.4	10.4	10.6	10.1	10.4	11
Total Dissolved Solids	500*	270	260	276	270	270	280	270	280	290	280	286	290	280	290	290	**648**	**1090**	**1130**	**1220**	**1130**	**1170**	**1130**	**1160**	**1170**	**660**	**650**	**674**	**650**	**650**	**640**	**670**
Total Suspended Solids	NA	<5	<5	<5	11	13	22	<10	25	<5	<5	<5	<5	<5	<5	<5	126	30	<5	<5	<5	<5	<5	6	<5	880	300	30	149	85	114	190
Scandium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Scandium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium, dissolved	0.05	0.0021	0.002	0.0017	0.002	0.0019	0.0022	0.0019	0.002	0.0017	0.0015	0.0015	0.0016	0.0015	0.0015	0.0015	0.0004	0.0009	0.0004	0.0005	0.0003	0.0003	0.0004	0.0004	0.0004	0.0009	0.0005	0.0005	0.0004	0.0004	0.0004	0.0003
Selenium, total	0.05	0.002	0.0019	0.002	0.0019	0.0017	0.0018	0.0018	0.0018	0.0015	0.0014	0.0015	0.0015	0.0014	0.0014	0.0015	0.0044	0.0027	0.0005	0.0005	0.0004	0.0004	0.0004	0.0008	0.0005	0.0011	0.0007	0.0006	0.0003	0.0005	0.0004	0.0004
Silver, dissolved	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005
Silver, total	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0001	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00059	0.00025	<0.00005	0.00007	0.00006	0.00009	0.00013
Sodium, dissolved	NA	28.3	25.3	25.6	26.8	25.3	25.8	25.5	25.1	25.7	23.4	23.5	24.3	21	23.2	23.7	113	285	287	288	302	291	298	292	291	136	147	144	144	122	138	140
Sodium, total	NA	26.4	26.1	25.6	26	25.6	25.7	24.8	25.8	24.8	24.3	24.5	24.1	24.2	23.9	23.2	110	286	305	306	295	295	297	292	289	141	140	142	140	138	137	137
Strontium, dissolved	NA	0.26	0.23	0.24	0.26	0.246	0.243	0.25	0.245	0.23	0.21	0.22	0.23	0.201	0.218	0.229	1.28	0.15	0.15	0.17	0.18	0.166	0.172	0.179	0.179	0.13	0.14	0.13	0.14	0.118	0.133	0.133
Strontium, total	NA	0.25	0.26	0.25	0.26	0.253	0.25	0.244	0.253	0.23	0.23	0.23	0.23	0.227	0.22	0.217	1.27	0.15	0.16	0.19	0.17	0.173	0.169	0.173	0.171	0.23	0.17	0.14	0.14	0.139	0.142	0.152
Sulfate	250*	29.66	30.7	32.8	29.2	29.6	30.4	29.8	28.1	28.08	28	30.9	27.4	27.6	27.3	25.9	**333**	**575.7**	**568**	**626**	**569**	**580**	**612**	**582**	**377**	**308.57**	**311**	**307**	**302**	**305**	**320**	**300**
Thallium, dissolved	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium, total	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	0.0005	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Tin, dissolved	NA	<0.0001	<0.0001	<0.0001	0.0008	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 2 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		59772			BISHOP WELL												BLM WELL, 3 VOLS	BLM WELL, 6 VOLS	BLM WELL, 12 VOLS	BLM WELL, 6 BOREHOLE VOLUMES PUMPED (6 VOLS)						DEPOSIT STOCK TANK								
Analytes	**MCL**	**3/18/13**	**3/18/13**	**3/18/13**	**6/18/13**	**8/8/13**	**11/24/13**	**3/24/14**	**6/25/14**	**9/11/14**	**3/26/13**	**6/18/13**	**8/7/13**	**8/7/13**	**11/25/13**	**3/24/14**	**6/27/14**	**9/15/14**	**3/18/13**	**3/18/13**	**3/18/13**	**6/18/13**	**8/8/13**	**11/24/13**	**3/24/14**	**6/27/14**	**9/15/14**	**3/17/13**	**6/20/13**	**8/13/13**	**11/22/13**	**3/16/14**	**3/16/14**	**3/16/14**	**6/24/14**	**9/17/14**
Aluminum, dissolved	0.05*	0.04	<0.03		0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		<0.03	<0.03
Aluminum, total	0.05*	<0.03	<0.03		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		<0.03	<0.03
Antimony, dissolved	0.006	0.0008	0.0008		0.0007	0.0008	0.0007	0.0006	0.0007	0.0007	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004			<0.0004	0.0005	0.0006	0.0005	<0.02	0.0006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004		<0.0004	<0.0004
Antimony, total	0.006	0.0007	0.0007		0.0008	0.0008	0.0008	0.0007	0.0008	0.0007	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0006			<0.0004	0.0006	0.0007	0.0006	0.0006	0.0006	<0.0004	<0.0004	0.0004	<0.0004	<0.0004	<0.0004		<0.0004	<0.0004
Arsenic, dissolved	0.010	**0.041**	**0.0398**		**0.0376**	**0.0367**	**0.0394**	**0.0372**	**0.0366**	**0.0381**	0.0038	0.0046	0.0043	0.0048	0.0079	0.0086	0.0042	0.009	**1.46**	**2.22**	**2.98**	**1.57**	**2.88**	**3.42**	**3.63**	**3.9**	**4.44**	**0.0257**	**0.0287**	**0.033**	**0.0249**	**0.0301**	**0.0299**		**0.0262**	**0.0262**
Arsenic, total	0.010	**0.0366**	**0.0374**		**0.038**	**0.0368**	**0.038**	**0.0348**	**0.037**	**0.0352**	0.0034	0.0042	0.0042	0.0044	0.0081	0.0078	0.005	**0.0101**	**1.54**	**2.41**	**3.38**	**1.63**	**2.83**	**3.27**	**3.75**	**4.63**	**4.54**	**0.0265**	**0.029**	**0.0307**	**0.0252**	**0.0257**	**0.0252**		**0.0278**	**0.027**
Barium, dissolved	2	0.03	0.03		0.031	0.03	0.03	0.024	0.027	0.028	0.012	0.017	0.01	0.011	0.021	0.015	0.014	0.023	0.043			0.04	0.065	0.073	0.062	0.065	0.069	0.051	0.054	0.058	0.051	0.049	0.039		0.057	0.056
Barium, total	2	0.026	0.026		0.028	0.029	0.03	0.03	0.028	0.026	0.01	0.013	0.015	0.014	0.022	0.022	0.012	0.02	0.037			0.034	0.062	0.068	0.067	0.063	0.063	0.051	0.058	0.058	0.051	0.051	0.05		0.056	0.059
Beryllium, dissolved	0.004	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.003	<0.00005	<0.003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Beryllium, total	0.004	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00011			<0.00005	<0.00005	0.00005	<0.002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Bicarbonate as CaCO3	NA	127		125	138	128	130	102	108	144	139	145	147	164	166	120	127	157	169	84	37	169	64	47	28	22	40.1	188	184	189	201	178	166		174	35
Bismuth, dissolved	NA	<0.04	<0.04		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04			<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	<0.04
Bismuth, total	NA	<0.04	<0.04		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04			<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	<0.04
Boron, dissolved	NA	0.072	0.072		0.06	0.08	0.09	0.08	0.07	0.07	0.21	0.2	0.21	0.2	0.22	0.2	0.22	0.21	0.66			0.65	0.67	0.64	0.61	0.59	0.6	0.06	0.08	0.1	0.07	0.07	0.05		0.09	0.09
Boron, total	NA	0.08	0.08		0.07	0.07	0.08	0.07	0.07	0.07	0.21	0.22	0.22	0.22	0.21	0.2	0.21	0.2	0.64			0.72	0.66	0.64	0.6	0.6	0.61	0.06	0.09	0.1	0.07	0.07	0.07		0.07	0.09
Cadmium, dissolved	0.005	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001
Cadmium, total	0.005	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001
Calcium, dissolved	NA	40.3	40.1		38.2	40	40	37.9	38.8	38.8	3	3	2.9	3.2	4.6	4.7	3	5.4	82.1	138	191	66.8	132	152	157	177	191	55.4	51.3	50.9	56.1	53.6	42.6		55.5	54.6
Calcium, total	NA	39.9	39.7		39.7	39.5	39	37.6	37.6	39.9	2.5	2.8	2.9	2.7	5	4.8	3.2	5.8	67.9	131	185	62.6	125	150	150	178	186	51.8	52.8	51.9	57	55.7	54.6		54.8	58.3
Carbonate as CaCO3	NA	<2		<2	7	<2	<2	<2	2	<2	34	14	5	6	4	4	7	4.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2		<2	<2
Chloride	250*	10.47		10.37	11.1	11.2	10.4	10.5	10.4	9.96	6.96	7.45	7.51	7.43	8.51	8.6	7.06	7.98	29.8			23.4	23	22.1	22.5	22.6	21.7	14.89	15.2	15.4	14.2	16.9	16.9		14.8	13.9
Chromium, dissolved	0.1	0.0008	0.0008		0.0009	0.0007	0.0008	0.0007	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.03	<0.0005	<0.03	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
Chromium, total	0.1	0.0009	0.0008		0.0009	0.0008	0.0008	0.0008	0.001	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		0.0007	<0.0005
Cobalt, dissolved	NA	0.00028	0.00039		0.0001	0.00023	0.00012	0.00016	0.0003	0.00026	0.00011	0.00018	0.00012	0.00035	0.00013	0.00017	0.00014	0.00011	0.02364			0.02956	0.05538	0.076	0.0833	0.101	0.1	0.00018	0.00029	0.00013	0.00039	0.00026	0.00016		0.00021	0.00039
Cobalt, total	NA	0.00008	0.00007		0.00015	0.00011	0.00009	0.00008	0.00014	0.0001	0.0001	0.0001	0.00009	0.00009	0.00008	0.00008	0.00008	0.00008	0.02296			0.02273	0.05864	0.07267	0.08309	0.09979	0.1089	0.00007	0.0002	0.00008	0.00009	0.00012	0.00011		0.00011	0.0002
Conductivity @25C (umhos/cm)	NA	370		370	379	364	364	351	375	374	369	386	384	380	388	374	383	387	1420			1410	1840	1970	2100	2200	2240	496	481	495	493	519	513		511	179
Copper, dissolved	1.3	<0.0005	<0.0005		0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.03	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
Copper, total	1.3	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0007			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
Cyanide, total	0.2	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	<0.003
Cyanide, WAD	0.2	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	<0.003
Fluoride	4	0.57		0.57	0.49	0.47	0.47	0.45	0.45	0.46	0.81	0.76	0.76	0.76	0.69	0.69	0.71	0.67	2.4			<1	0.93	0.77	0.83	<0.5	<1	0.51	0.51	0.47	0.4	0.44	0.45		0.46	0.46
Gallium, dissolved	NA	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1
Gallium, total	NA	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1
Hardness as CaCO3	NA	132	131		124	129	130	123	126	126	10	10	9	11	16	16	10	19	222	373	517	181	356	412	426	481	518	189	173	170	189	182	145		186	182
Hardness as CaCO3 (dissolved)	NA																																				
Hardness as CaCO3 (total)	NA																																				
Hydroxide as CaCO3	NA	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	<2
Iron, dissolved	0.3*	0.28	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	**55**	**92.2**	**131**	**54.6**	**113**	**146**	**163**	**189**	**200**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
Iron, total	0.3*	0.04	0.04		<0.02	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.07	0.03	0.04	0.05	0.04	**47.4**	**88.9**	**129**	**47.6**	**111**	**139**	**156**	**186**	**201**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
Lead, dissolved	0.015	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001
Lead, total	0.015	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0003	0.0002	0.0005			<0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001
Lithium, dissolved	NA	0.05	0.04		0.04	0.05	0.05	0.038	0.043	0.042	<0.02	<0.02	<0.02	<0.02	0.02	0.013	0.02	0.023	0.58			0.52	0.68	0.69	0.709	0.726	0.772	0.04	0.04	0.05	0.05	0.04	0.032		0.046	0.046
Lithium, total	NA	0.04	0.04		0.05	0.04	0.04	0.046	0.043	0.039	<0.02	0.02	<0.02	<0.02	<0.02	0.022	0.017	0.017	0.53			0.52	0.64	0.66	0.7	0.722	0.751	0.04	0.05	0.05	0.04	0.046	0.044		0.047	0.052
Magnesium, dissolved	NA	7.5	7.5		7	7	7.3	6.8	7	7.1	0.5	0.7	0.5	0.6	1	1.1	0.7	1.4	4.1	6.9	9.6	3.3	6.4	7.7	8.2	9.4	10	12.4	10.9	10.5	11.9	11.8	9.3		11.4	11.1
Magnesium, total	NA	7.4	7.3		7.2	7	7.1	6.8	6.5	7.2	0.5	0.5	0.6	0.6	1.2	1.1	0.7	1.6	3.2	6.2	8.8	3	6.2	7.6	7.9	9.3	9.8	11.8	11	10.5	12.1	12	11.8		11.3	12.4
Manganese, dissolved	0.05*	0.0007	0.0005		0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.007	0.0067	0.0075	0.0076	0.0059	0.006	0.0078	0.0059	**0.57**	**0.93**	**1.29**	**0.532**	**1.05**	**1.28**	**1.31**	**1.53**	**1.67**	0.0015	<0.0005	<0.0005	0.0017	0.0033	0.0032		<0.0005	0.003
Manganese, total	0.05*	0.0013	0.001		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0086	0.0069	0.0093	0.0089	0.0066	0.0067	0.0098	0.006	**0.43**	**0.9**	**1.24**	**0.48**	**0.99**	**1.2**	**1.34**	**1.6**	**1.65**	0.0021	<0.0005	<0.0005	0.0013	0.003	0.003		<0.0005	<0.0005
Mercury, dissolved (ng/L)	2000	<1	<1		0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<1	0.6	0.4	0.4	0.3	0.4	0.5	0.3	<1			0.9	0.4	<1	0.5	0.6	0.7	0.4	0.6	0.3	<0.2		0.4	0.4	<1	0.5
Mercury, total (ng/L)	2000	<1	<1		0.8	<0.4	<0.2	<0.2	<0.2	<0.2	0.8	1	0.7	0.6	0.4	0.2	0.4	0.3	9			1.8	2.8	4	4	2.9	1.9	0.3	1	<0.4	<0.2	0.9	1	0.3	0.4	0.3
Molybdenum, dissolved	NA	0.0037	0.0038		0.004	0.0037	0.0039	0.0034	0.0038	0.0041	0.0086	0.0097	0.0088	0.009	0.008	0.0083	0.008	0.0091	0.0017			0.002	0.0014	0.0017	0.0014	<0.03	0.0013	0.0031	0.0032	0.0037	0.0031	0.0035	0.0036		0.003	0.0029
Molybdenum, total	NA	0.0041	0.004		0.0039	0.0039	0.0038	0.0038	0.0038	0.0038	0.0094	0.0092	0.0094	0.0092	0.0093	0.009	0.0086	0.0095	0.0019			0.0017	0.0015	0.0017	0.0015	0.0014	0.0014	0.0037	0.0036	0.0038	0.003	0.0036	0.0035		0.0032	0.003
Nickel, dissolved	NA	<0.0006	<0.0006		<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0102			0.016	0.043	0.0764	0.0844	0.12	0.1212	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006		<0.0006	<0.0006
Nickel, total	NA	<0.0006	<0.0006		<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.01			0.0128	0.0471	0.0683	0.0831	0.1168	0.1239	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006		<0.0006	<0.0006
Nitrate as N, dissolved	10	1.18		1.18	0.76	1.1					0.05	1	0.06	0.06					0.05			<0.02	<0.02					0.05	0.02	0.04						
Nitrate/Nitrite as N	10					1.05	1.17	1.28	1.14	1.11			0.06	0.08	0.3	0.35	0.07	0.27					<0.02		<0.02	<0.02	<0.02			0.04					<0.02	0.03
Nitrate/Nitrite as N, dissolved	10	1.18		1.18	0.76	1.1					0.05	1.01	0.06	0.06					0.05			<0.02	<0.02					0.05	0.02	0.04						
Nitrite as N, dissolved	1	<0.01		<0.01	<0.01	<0.01					<0.01	0.01	<0.01	<0.01					<0.01			<0.01	<0.01					<0.01	<0.01	<0.01						
Nitrogen, ammonia	NA	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.08	0.12	0.13	<0.05	<0.05	0.07	<0.05	0.54			0.51	0.74	0.71	0.72	0.81	0.79	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05
pH (standard units)	NA	8.3		8.3	8.4	8.2	8.2	8.2	8.3	8.2	8.6	8.7	8.6	8.5	8.4	8.4	8.5	8.4	7.9			8.1	7.2	6.7	6.6	6.7	6.7	8.3	8.2	8.3	8.1	8.2	8.1		8.3	7.6
pH measured at (°C)	NA	21		21	23	20	21	23	21	19.2	20	24	21	21	21	23	23	19.6	21			23	19	21	23	22	19.5	21	20	21	22	21	21		23	20.3
Phosphorus, total	NA	0.02	0.03		0.03	0.02	0.02	0.03	0.02	0.03	0.14	0.13	0.13	0.13	0.13	0.12	0.14	0.11	0.48			0.29	0.39	0.38	0.35	0.68	0.31	0.02	0.03	0.03	0.02	0.02	0.02		0.02	0.02
Potassium, dissolved	NA	6.3	6.3		5.7	6	6.1	5.8	6	6	4.2	3.9	3.8	3.8	4.2	4.2	4.2	4.1	4.3	5.4	6.6	3.6	5.1	5.7	6	6.6	7.1	5.1	5.6	6.2	4.7	4.3	3.5		5.6	5.7
Potassium, total	NA	6.1	6.1		6.1	6.1	6	5.9	5.8	6.2	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	3.6	5	6.3	3.7	5.2	5.6	5.9	6.5	7	4.5	5.7	6.2	4.7	4.3	4.2		5.5	6
Total Dissolved Solids	500*	280		280	270	282	260	280	270	280	240	240	236	252	250	260	250	250	**1130**			**1080**	**1570**	**1450**	**1640**	**1800**	**1850**	340	350	392	340	340	340		370	370
Total Suspended Solids	NA	<5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	73			78	140	121	116	125	110	<5	<5	<5	<5	<5	<5		<5	<5
Scandium, dissolved	NA	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1
Scandium, total	NA	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1
Selenium, dissolved	0.05	0.0033	0.0031		0.0029	0.0027	0.0028	0.003	0.0028	0.0029	<0.0001	<0.0001	<0.0001	0.0001	0.0004	0.0004	0.0002	0.0004	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	0.0059	0.0051	0.0057	0.0047	0.006	0.0059		0.0053	0.0045
Selenium, total	0.05	0.0027	0.0027		0.0027	0.0029	0.0027	0.0025	0.0027	0.0025	<0.0001	<0.0001	<0.0001	<0.0001	0.0004	0.0004	<0.0001	0.0005	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0058	0.0055	0.005	0.0043	0.0051	0.005		0.0048	0.0044
Silver, dissolved	0.10*	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005			<0.00005	<0.001	<0.00005	<0.00005	<0.003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Silver, total	0.10*	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Sodium, dissolved	NA	28.5	27.6		25.2	26.7	26.5	25.3	25.3	25.4	86.3	80.8	77.6	77.5	84.2	81.6	81.7	80.3	268	302	323	251	286	283	275	264	275	38.1	34.1	34.4	34.6	35.2	28		34.4	33.1
Sodium, total	NA	26.3	26.2		26.1	25.9	25.7	25.4	24.6	25.9	85.8	83.7	81.9	81.4	82.1	81.2	82.5	78.1	253	302	320	255	278	279	271	267	265	34.9	35.3	34.6	34.6	37.1	36.1		33.7	34.8
Strontium, dissolved	NA	0.22	0.21		0.19	0.2	0.21	0.196	0.199	0.199	0.02	0.02	0.02	0.02	0.04	0.035	0.026	0.048	1.77			1.51	2.94	3.47	3.61	3.97	4.2	0.25	0.25	0.24	0.26	0.251	0.198		0.257	0.253
Strontium, total	NA	0.2	0.2		0.21	0.2	0.2	0.202	0.193	0.201	0.02	0.03	0.02	0.02	0.04	0.042	0.023	0.043	1.54			1.42	2.84	3.26	3.42	3.83	3.98	0.24	0.25	0.25	0.26	0.255	0.25		0.252	0.271
Sulfate	250*	37.37		37.61	37.5	40	36.5	36.6	36.5	34.3	19.72	21.7	22.2	22	26.2	25.8	21.7	23.7	**578.3**	**1130**	**830**	**541**	**941**	**1040**	**1070**

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 3 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		GMW17-32			GMW17-33	GOVERNMENT CORRAL SPRINGS										GW-1								GW-4								LOWE SPRING	
Analytes	**MCL**	12/11/17	7/25/18	12/5/18	12/14/17	3/13/13	3/13/13	6/20/13	8/7/13	8/7/13	11/22/13	3/16/14	6/24/14	9/17/14	9/17/14	3/14/13	6/17/13	6/17/13	8/6/13	11/21/13	3/18/14	6/25/14	9/11/14	3/14/13	6/17/13	8/6/13	11/21/13	11/21/13	3/18/14	6/27/14	9/11/14	3/13/13	6/26/13
Aluminum, dissolved	0.05*	**0.25**	0.04	<0.03	<0.03	<0.03		<0.03	<0.03		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.04	0.04	0.04	0.05	**0.06**	**0.07**	0.05	<0.03	<0.03
Aluminum, total	0.05*	**4.78**	**0.09**	**0.07**	<0.03	<0.03		0.04	0.04		**0.06**	0.05	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**1.68**	**0.95**	**0.68**	**1.13**	**0.84**	**1.09**	**0.6**	**0.83**	<0.03	<0.03
Antimony, dissolved	0.006	**0.115**	**0.0939**	**0.0371**	**0.0217**	<0.0004		<0.0004	<0.0004		<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.0005	0.0004	0.0005	0.0004	0.0004	0.0005	0.0005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Antimony, total	0.006	**0.0666**	**0.0876**	**0.0374**	**0.0244**	<0.0004		<0.0004	<0.0004		<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0005	0.0004	0.0005	0.0005	0.0005	0.0004	0.0005	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic, dissolved	0.010	**0.0588**	**0.0871**	**0.0789**	**0.106**	0.0079		0.0075	0.0073		0.0079	0.0084	0.0073	0.0075	0.0075	**0.0312**	**0.0304**	**0.031**	**0.0307**	**0.0317**	**0.0294**	**0.0309**	**0.0304**	**0.0119**	**0.0115**	**0.012**	**0.0118**	**0.0119**	**0.0109**	**0.0109**	**0.0109**	0.0009	0.0009
Arsenic, total	0.010	**0.116**	**0.0881**	**0.0799**	**0.107**	0.0078		0.0077	0.0074		0.0081	0.0073	0.0072	0.0075	0.0076	**0.0306**	**0.03**	**0.0297**	**0.0296**	**0.0313**	**0.0283**	**0.0302**	**0.0268**	**0.0118**	**0.0118**	**0.0126**	**0.0116**	**0.0113**	**0.0111**	**0.0114**	**0.0116**	0.001	0.001
Barium, dissolved	2	0.036	0.035	0.032	0.005	0.032		0.028	0.024		0.032	0.028	0.024	0.024	0.024	0.03	0.034	0.034	0.029	0.03	0.025	0.029	0.03	<0.003	0.005	<0.003	0.005	0.005	<0.003	<0.003	<0.003	0.053	0.055
Barium, total	2	0.135	0.038	0.031	0.008	0.028		0.032	0.03		0.031	0.03	0.023	0.026	0.025	0.029	0.028	0.028	0.031	0.033	0.031	0.029	0.028	0.01	0.006	0.006	0.008	0.007	0.009	0.003	0.004	0.048	0.058
Beryllium, dissolved	0.004	<0.00005	<0.00005	<0.00005	0.00007	<0.00005		<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Beryllium, total	0.004	0.00056	<0.00005	<0.00005	0.00007	<0.00005		<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00028	0.00014	0.00011	0.00013	0.00009	0.00014	0.00008	0.0001	<0.00005	<0.00005
Bicarbonate as CaCO3	NA	<2	<2	78.7	104		163	184	161		168	138	137	182	180	146	145	145	148	146	126	135	156	179	178	179	177	177	162	155	189	317	335
Bismuth, dissolved	NA	<0.04	<0.04	<0.04	<0.04	0.05		<0.04	<0.04		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bismuth, total	NA	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	<0.04		<0.04	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Boron, dissolved	NA	0.24	0.24	0.31	0.14	0.053		0.05	0.04		0.06	0.05	0.05	0.05	0.06	0.063	0.08	0.08	0.07	0.07	0.06	0.07	0.07	0.126	0.16	0.14	0.15	0.16	0.12	0.14	0.14	0.11	0.15
Boron, total	NA	0.26	0.25	0.3	0.13	0.051		0.06	0.05		0.06	0.05	0.03	0.05	0.05	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.06	0.13	0.14	0.15	0.14	0.14	0.14	0.14	0.13	0.11	0.16
Cadmium, dissolved	0.005	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmium, total	0.005	0.0001	<0.0001	<0.00005	<0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium, dissolved	NA	65.1	27.8	49.8	22.8	49.3		47.9	47.8		48.1	46.3	47.8	48	48.4	44.7	46.7	47.3	45.2	44.7	39.6	45	44.4	3.6	4	3.7	3.6	3.5	3.1	3.5	3.4	59.4	55.2
Calcium, total	NA	91	29.2	53.6	24.1	49.9		50.2	49.3		47.5	48	48.2	52	51.2	46.7	45.4	44.9	46.5	45.8	47.2	43.4	46.3	4.8	4.2	4.2	4.2	4	4.1	3.9	4	57	55.7
Carbonate as CaCO3	NA	45.4	36	<2	<2		2	<2	<2		<2	<2	4	<2	<2	5	4	4	<2	<2	<2	3	<2	16	16	14	14	14	9	11	14.9	9	13
Chloride	250*	31.1	33.2	39.6	10.1		13.05	13.5		13.6	13	13.2	13	12.7	12.7	12.13	12.5	12.5	12	11.7	11.8	11.7	11.3	28.5	28.7	29	27	27	26.9	26.7	25.4	55.26	46.1
Chromium, dissolved	0.1	0.0008	0.0006	<0.0005	<0.0005	0.0011		0.0011	0.0011		0.0011	0.0013	0.0013	0.0011	0.0011	0.0007	0.0008	0.0008	0.0007	0.0007	0.0007	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium, total	0.1	**0.3**	0.0042	0.0016	<0.0005	0.0013		0.0015	0.0012		0.0013	0.0016	0.0015	0.0012	0.0013	0.0009	0.001	0.0008	0.0007	0.0007	0.0007	0.001	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005
Cobalt, dissolved	NA	0.00033	0.00006	0.00018	0.0007	0.00018		0.00025	0.00082		0.00023	0.00012	0.00017	0.00022	0.00043	0.00027	0.00013	0.00013	0.0002	0.00034	0.00019	0.00027	0.00041	0.00024	0.00121	0.00009	0.00011	0.00007	0.00047	0.00038	0.0004	0.00022	0.0012
Cobalt, total	NA	0.00637	0.00021	0.00018	0.00072	0.00008		0.00022	0.00011		0.00012	0.00012	0.00011	0.00018	0.00019	0.00016	0.00017	0.00017	0.00016	0.00018	0.00017	0.00023	0.00017	0.00015	0.00009	0.00007	0.00009	0.00008	0.00008	0.00006	0.00008	0.00012	0.00011
Conductivity @25C (umhos/cm)	NA	1530	1210	1240	477		422	427	437		420	423	432	424	440	414	421	425	420	411	419	416	412	673	681	682	665	666	696	671	660	924	885
Copper, dissolved	1.3	0.0026	<0.0004	<0.0008	0.0006	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	0.0006
Copper, total	1.3	0.0234	<0.0004	<0.0008	0.0005	<0.0005		0.0007	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	0.0008	0.0009
Cyanide, total	0.2	<0.003	<0.003	<0.003	<0.003		<0.003	<0.003	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide, WAD	0.2	<0.003	<0.003	<0.003	<0.003		<0.003	<0.003	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Fluoride	4	1.12	1.69	1.76	2.01		0.44	0.38		0.34	0.37	0.38	0.37	0.41	0.41	0.53	0.49	0.53	0.45	0.46	0.45	0.45	0.46	2.47	2.3	2.3	2.21	2.21	2.23	2.21	2.13	0.61	0.63
Gallium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gallium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hardness as CaCO3	NA					184		179	176		179	172	179	179	181	148	153	156	148	147	129	147	145	9	11	9	9	9	8	9.6	9.7	271	242
Hardness as CaCO3 (dissolved)	NA	163	76	137	72																												
Hardness as CaCO3 (total)	NA																																
Hydroxide as CaCO3	NA	82.7	13.7	<2	<2		<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron, dissolved	0.3*	0.07	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.02	<0.02
Iron, total	0.3*	**35.5**	**0.34**	**0.52**	<0.02	<0.02		0.04	0.04		0.06	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.59**	**0.36**	0.28	**0.42**	**0.33**	**0.41**	0.25	**0.36**	<0.02	<0.02
Lead, dissolved	0.015	<0.0001	<0.0001	<0.0001	0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead, total	0.015	**0.0204**	0.0001	0.0003	0.0002	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0012	0.0008	0.0006	0.0008	0.0007	0.0009	0.0006	0.0008	<0.0001	<0.0001
Lithium, dissolved	NA	0.339	0.392	0.42	0.086	<0.02		<0.02	<0.02		0.02	0.017	0.017	0.017	0.017	0.04	0.05	0.05	0.05	0.04	0.04	0.046	0.044	0.09	0.1	0.09	0.09	0.09	0.078	0.09	0.091	0.04	0.03
Lithium, total	NA	0.35	0.384	0.436	0.08	<0.02		0.02	0.02		<0.02	0.021	0.018	0.02	0.02	0.04	0.04	0.04	0.05	0.05	0.048	0.047	0.044	0.09	0.09	0.09	0.09	0.09	0.094	0.09	0.091	0.03	0.04
Magnesium, dissolved	NA	<0.2	1.5	3.1	3.7	14.9		14.4	13.8		14.2	13.7	14.4	14.4	14.6	8.7	8.9	9.1	8.4	8.6	7.2	8.5	8.4	<0.2	0.2	0.2	<0.2	<0.2	<0.2	0.2	0.3	29.9	25.2
Magnesium, total	NA	1.1	1.5	3.2	3.7	15.2		15.1	14.8		14.1	14	14.5	16.2	16	9.1	8.7	8.6	8.8	8.6	8.8	7.9	8.5	0.3	<0.2	0.2	0.2	<0.2	<0.2	0.2	0.5	28.6	25.8
Manganese, dissolved	0.05*	<0.0004	<0.0004	0.0057	0.0453	<0.0005		<0.0005	0.0018		0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	0.0071	0.0048	0.0056	0.0054	0.0055	0.0055	0.0052	<0.0005	0.0012
Manganese, total	0.05*	**0.206**	0.006	0.0085	0.05	0.0025		0.003	0.0056		0.0037	0.0035	<0.0005	0.001	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.001	0.0005	<0.0005	0.0147	0.0115	0.0098	0.0129	0.0116	0.0101	0.0088	0.0122	<0.0005	<0.0005
Mercury, dissolved (ng/L)	2000	1.6	0.8	<0.2	4.1	<0.4		0.4	<0.2		<0.2	<0.2	0.2	1	1	<0.4	0.6	0.6	<1	0.2	0.3	0.4	0.3	<0.4	0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	0.6	1.1
Mercury, total (ng/L)	2000	84	1.7	1.5	11.5	<0.4		1.5	<0.4		0.2	0.5	0.4	0.2	0.2	1	0.8	0.5	<0.4	0.4	0.8	0.3	0.3	4	2	1	1.1	0.5	0.8	0.8	0.6	0.7	1.5
Molybdenum, dissolved	NA	0.0965	0.0287	0.0175	0.0171	0.0017		0.0015	0.0017		0.0018	0.0016	0.0015	0.0018	0.0019	0.0037	0.004	0.004	0.004	0.0038	0.0039	0.0042	0.0041	0.0088	0.0093	0.0094	0.0099	0.0097	0.009	0.0083	0.0096	<0.0005	<0.0005
Molybdenum, total	NA	0.108	0.0322	0.0194	0.0173	0.0018		0.0018	0.0018		0.0018	0.0017	0.0015	0.0019	0.0019	0.0043	0.0042	0.0043	0.0043	0.0042	0.004	0.004	0.0038	0.0105	0.0099	0.01	0.0088	0.0088	0.0093	0.0087	0.0099	<0.0005	<0.0005
Nickel, dissolved	NA	0.001	<0.0006	<0.0006	0.0009	<0.0006		<0.0006	<0.0006		<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nickel, total	NA	0.147	0.0021	0.0009	0.0009	<0.0006		<0.0006	<0.0006		<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nitrate as N, dissolved	10						2.56	2.37		2.46						2.25	2.17	2.17	2.15					<0.02	<0.02	<0.02						9.4	5.56
Nitrate/Nitrite as N	10	0.68	0.06	0.06	1.46				0.25		2.7	2.99	2.62	2.51	2.51				1.99	2.31	2.44	2.09	2.04				<0.02							
Nitrate/Nitrite as N, dissolved	10						2.56	2.37		2.46						2.25	2.17	2.17	2.15					<0.02	<0.02	<0.02						9.4	5.56
Nitrite as N, dissolved	1						<0.01	<0.01		<0.01						<0.01	<0.01	<0.01	<0.01					<0.01	<0.01	<0.01						<0.01	<0.01
Nitrogen, ammonia	NA	1.2	0.53	0.22	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	0.08	0.09	0.1	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH (standard units)	NA	11.3	10.3	8.2	8.1		8.3	8.3	8.3		8.3	8.2	8.3	8.2	8.2	8.3	8.3	8.3	8.2	8.2	8.1	8.3	8.2	8.7	8.7	8.7	8.6	8.7	8.5	8.6	8.6	8.3	8.3
pH measured at (°C)	NA	21.2	19.8	22.6	21.5		21	20	21		22	20	22	20.7	20.7	20	21	22	21	21	22	21	19	21	23	21	21	21	21	22	19.2	21	22
Phosphorus, total	NA	0.23	<0.02	<0.02	0.1	0.02		0.01	<0.01		0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.02	0.02	0.07	0.02	0.02	0.01	0.02
Potassium, dissolved	NA	18.6	13.8	10.4	4.2	4.3		4.3	4		4.3	4	4.2	4.4	4.5	6.1	6.5	6.5	6	6.1	5.2	6.1	6.1	0.7	0.9	0.5	0.7	0.7	0.4	0.7	0.7	1	<0.3
Potassium, total	NA	21.3	14.1	10.8	4.3	4.3		4.4	4.4		4.2	4	4.1	4.7	4.6	6.4	6.2	6.1	6.3	6.2	6.1	6	6.4	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.9	<0.3	<0.3
Total Dissolved Solids	500*	**920**	**768**	**830**	280		290	280		294	280	280	300	300	300	300	290	280	308	300	290	290	290	420	380	416	400	410	260	390	390	**570**	**540**
Total Suspended Solids	NA	138	5	5	<5		<5	<5	<5		<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5	<5	46	23	22	21	12	33	14	18	<5	<5
Scandium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Scandium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium, dissolved	0.05	0.0015	0.0001	<0.0001	0.0105	0.0019		0.0016	0.0016		0.0019	0.0018	0.0018	0.0016	0.0017	0.0035	0.0037	0.0038	0.0034	0.0035	0.0032	0.0034	0.0035	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0024	0.002
Selenium, total	0.05	0.0015	0.0002	<0.0001	0.0106	0.0018		0.0017	0.0016		0.0017	0.0016	0.0016	0.0015	0.0017	0.0032	0.0032	0.0032	0.0032	0.0034	0.0033	0.0033	0.003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0022	0.0018
Silver, dissolved	0.10*	<0.00005	<0.0005	<0.0001	<0.00005	<0.00005		<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Silver, total	0.10*	0.0002	<0.0005	<0.0001	<0.00005	<0.00005		<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium, dissolved	NA	211	197	202	62.9	20.1		18.3	17.8		19.1	18.1	18	18.7	18.9	26.1	27.3	27.7	26.4	26.4	23.3	26.1	25.9	147	156	151	145	146	129	141	144	122	113
Sodium, total	NA	211	203	211	63.7	19.2		19.3	19		18.5	18.7	18.1	19.9	19.5	27.4	26.5	26.2	27.3	26.9	27	25.1	26.8	154	150	152	148	149	152	146	144	120	114
Strontium, dissolved	NA	1.35	1.03	1.39	0.198	0.26		0.25	0.24		0.25	0.244	0.241	0.243	0.246	0.21	0.23	0.23	0.21	0.21	0.188	0.209	0.206	0.02	0.03	0.02	0.02	0.02	0.019	0.018	0.019	0.22	0.22
Strontium, total	NA	1.56	1.02	1.45	0.198	0.25		0.27	0.26		0.25	0.245	0.241	0.264	0.259	0.21	0.21	0.21	0.22	0.21	0.214	0.201	0.21	0.03	0.03	0.03	0.03	0.03	0.029	0.021	0.023	0.22	0.22
Sulfate	250*	**381**	**417**	**532**	86.4		21.39	24.2		27.1	23.8	24	23.6	22.6	22.6	35.82	35.1	37.5	36.7	34.2	34	34	32.1	95.81	93.9	94.9	89.1	89.1	88.3	86.8	81.6	61.59	57.2
Thallium, dissolved	NA	<0.0001	<0.0001	<0.0001	0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium, total	NA	0.0001	<0.0001	<0.0001	0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin, dissolved	NA	0.0014	<0.0001	<0.0008	<0.0001	<0.0001		<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
Tin, total

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 4 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		POISON SPRING							PROD-1							PW-1							PW-4							
Analytes	**MCL**	**3/26/13**	**6/26/13**	**8/13/13**	**11/21/13**	**3/16/14**	**6/24/14**	**9/16/14**	**3/17/13**	**6/20/13**	**8/13/13**	**11/22/13**	**3/16/14**	**6/24/14**	**9/16/14**	**3/26/13**	**6/17/13**	**8/6/13**	**11/21/13**	**3/18/14**	**6/25/14**	**9/11/14**	**3/14/13**	**6/17/13**	**8/6/13**	**11/21/13**	**3/18/14**	**6/25/14**	**6/25/14**	**9/11/14**
Aluminum, dissolved	0.05*	<0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**0.08**	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**0.08**	<0.03	**0.07**	0.05	**0.11**	0.05	**0.08**	**0.08**
Aluminum, total	0.05*	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**0.23**	<0.03	**0.06**	**0.08**	<0.03	<0.03	<0.03	**8.11**	**7.75**	**5.98**	**6.52**	**6.11**	**5.82**	**3.94**	**4.7**
Antimony, dissolved	0.006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Antimony, total	0.006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic, dissolved	0.010	**0.036**	**0.0364**	**0.0352**	**0.0356**	**0.0396**	**0.0348**	**0.034**	**0.0631**	**0.0604**	**0.0616**	**0.0629**	**0.071**	**0.0581**	**0.0624**	**0.0317**	**0.0309**	**0.0302**	**0.0315**	**0.0286**	**0.0313**	**0.0267**	**0.013**	**0.0126**	**0.0137**	**0.0133**	**0.0127**	**0.0131**	**0.0129**	**0.0116**
Arsenic, total	0.010	**0.036**	**0.0333**	**0.0335**	**0.0371**	**0.0337**	**0.035**	**0.0343**	**0.061**	**0.0602**	**0.0598**	**0.0615**	**0.0589**	**0.0581**	**0.0579**	**0.0331**	**0.0307**	**0.0294**	**0.031**	**0.0282**	**0.0288**	**0.0304**	**0.0183**	**0.017**	**0.0168**	**0.0221**	**0.0148**	**0.016**	**0.0148**	**0.0157**
Barium, dissolved	2	<0.003	<0.003	<0.003	0.005	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	0.005	<0.003	<0.003	<0.003	0.029	0.033	0.029	0.03	0.025	0.029	0.03	0.004	0.006	0.003	0.007	<0.003	<0.003	<0.003	0.003
Barium, total	2	<0.003	0.005	0.003	0.006	0.004	<0.003	0.005	<0.003	0.003	<0.003	0.003	<0.003	<0.003	0.004	0.031	0.028	0.032	0.033	0.031	0.029	0.028	0.024	0.019	0.018	0.018	0.017	0.014	0.01	0.01
Beryllium, dissolved	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Beryllium, total	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00045	0.00038	0.00031	0.00033	0.00032	0.00027	0.00021	0.00021
Bicarbonate as CaCO3	NA	113	123	135	111	98	101	115	186	185	186	209	162	159	200	126	125	129	128	110	120	137	189	188	203	183	177	156	157	198
Bismuth, dissolved	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bismuth, total	NA	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Boron, dissolved	NA	0.118	0.12	0.13	0.13	0.13	0.13	0.12	0.099	0.1	0.11	0.12	0.11	0.11	0.1	0.071	0.08	0.07	0.07	0.06	0.07	0.07	0.117	0.14	0.14	0.15	0.12	0.14	0.14	0.14
Boron, total	NA	0.12	0.12	0.13	0.13	0.12	0.11	0.12	0.1	0.11	0.11	0.11	0.1	0.09	0.11	0.07	0.07	0.07	0.09	0.07	0.06	0.06	0.13	0.11	0.12	0.14	0.14	0.13	0.12	0.13
Cadmium, dissolved	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmium, total	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Calcium, dissolved	NA	1.3	1.1	1	1.3	1	1.1	1.1	12.3	11.7	11.3	11.7	11.4	11.9	11.5	32.1	30.5	30.1	29.7	26.4	29.5	29.8	9.5	9.6	9.3	8.6	7.3	8.1	8.2	7.9
Calcium, total	NA	1.2	1.1	1.1	1.1	1.1	1.1	1.2	12.2	11.9	11.7	11.8	11.7	11.7	11.9	30.8	29.2	31	30	30.4	29.9	30.4	14.7	13.5	13	12.3	11.6	11.4	10.3	10.6
Carbonate as CaCO3	NA	54	41	51	52	43	41	62.9	11	11	12	7	6	11	6	4	6	<2	3	<2	4	<2	11	13	12	10	4	12	12	8.5
Chloride	250*	9.28	9.63	9.4	9.03	9.12	9.06	8.67	21.86	23.3	22.5	22	22.2	22	21.2	8.48	8.83	8.96	8.13	8.22	8.18	7.89	49.25	47.7	46.9	42.6	40	42	48.6	38
Chromium, dissolved	0.1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0008	0.0006	0.0007	0.0006	0.0008	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium, total	0.1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.0008	0.0016	0.0008	0.0007	0.001	0.0007	0.0006	0.0013	<0.0005	0.0008	<0.0005	0.0006	<0.0005	<0.0005
Cobalt, dissolved	NA	0.00011	0.00173	0.00015	<0.00005	<0.00005	0.0001	0.0003	0.00014	0.00016	0.00008	0.00006	0.00009	<0.00005	0.00031	0.00012	0.00008	0.00012	0.00013	0.00015	0.00013	0.00014	0.00048	0.0001	0.0009	0.00016	0.00025	0.00031	0.00063	0.00014
Cobalt, total	NA	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00009	0.00006	0.00007	0.00008	0.00008	0.0001	0.00009	0.00044	0.00037	0.0003	0.00049	0.00028	0.00029	0.00022	0.00024
Conductivity @25C (umhos/cm)	NA	497	495	504	495	496	501	500	628	624	639	618	625	639	629	347	356	357	349	355	355	351	904	893	888	853	841	840	843	826
Copper, dissolved	1.3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper, total	1.3	<0.0005	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	0.0012	0.0006	0.0013	0.0007	0.0012	0.0007	0.0006
Cyanide, total	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide, WAD	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Fluoride	4	0.81	0.76	0.74	0.73	0.74	0.72	0.69	1.16	1.12	1	1.06	1.07	1.06	1.04	0.5	0.47	0.44	0.42	0.43	0.41	0.41	2.37	2.25	2.21	1.9	1.86	2.05	2.41	2.01
Gallium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gallium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hardness as CaCO3	NA	3	3	3	3	3	2.8	4	32	31	28	31	29	31	31	96	91	89	88	78	88	89	26	26	25	24	20	23	23	22
Hardness as CaCO3 (dissolved)	NA																													
Hardness as CaCO3 (total)	NA																													
Hydroxide as CaCO3	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron, dissolved	0.3*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.05	0.04	0.06	0.06	0.05	0.05	<0.02	<0.02	<0.02	0.02	0.04	0.02	0.06	0.21	0.27	0.3	0.26	0.25	0.17	0.19	0.17
Iron, total	0.3*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.04	0.06	0.06	0.04	0.04	0.05	**1.04**	**0.68**	0.26	**0.32**	0.16	0.25	0.26	**7.99**	**7.3**	**5.82**	**23.5**	**6.06**	**5.96**	**3.98**	**4.85**
Lead, dissolved	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead, total	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0088	0.0072	0.0066	0.0115	0.0048	0.0055	0.0043	0.0039
Lithium, dissolved	NA	<0.02	<0.02	<0.02	<0.02	<0.008	<0.008	<0.008	0.16	0.16	0.16	0.16	0.154	0.159	0.156	0.06	0.07	0.07	0.07	0.058	0.067	0.066	0.1	0.11	0.1	0.1	0.081	0.093	0.093	0.092
Lithium, total	NA	<0.02	<0.02	<0.02	<0.02	0.009	<0.008	0.008	0.16	0.16	0.16	0.16	0.156	0.156	0.159	0.07	0.06	0.07	0.07	0.069	0.067	0.064	0.1	0.1	0.1	0.1	0.094	0.095	0.093	0.091
Magnesium, dissolved	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.2	0.3	<0.2	0.3	0.2	0.4	0.5	3.9	3.6	3.3	3.4	2.8	3.4	3.5	0.5	0.6	0.5	0.5	0.3	0.6	0.6	0.6
Magnesium, total	NA	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.3	0.3	0.4	0.4	0.4	<0.2	0.4	3.7	3.3	3.6	3.5	3.3	3.4	3.6	1.9	1.7	1.6	1.5	1.3	1.5	1.2	1.4
Manganese, dissolved	0.05*	0.0009	0.0027	0.0009	0.0008	0.0009	0.001	0.0011	0.0045	0.0413	0.0434	0.0469	**0.0513**	0.0442	0.0467	0.0018	0.0027	0.0019	0.0059	0.002	0.0015	0.002	0.0428	0.041	0.0409	0.0388	0.0357	0.0336	0.0333	0.0283
Manganese, total	0.05*	0.0023	0.0008	0.0009	0.0013	0.0008	0.0008	0.0008	0.0492	0.0449	0.0464	0.0452	0.0471	0.0445	0.0465	0.035	0.0079	0.0101	0.0136	0.0077	0.0083	0.007	**0.0971**	**0.0753**	**0.0689**	**0.1679**	**0.064**	**0.0602**	**0.0509**	**0.0522**
Mercury, dissolved (ng/L)	2000	<1	0.5	<0.2	<0.2	<0.2	<0.2	0.7	<0.4	0.8	0.3	0.2	0.5	0.3	0.3	<1	0.3	<1	<0.2	<0.2	<0.2	<0.2	<0.4	2	<1	<0.2	<0.2	0.2	<0.2	<0.2
Mercury, total (ng/L)	2000	0.5	0.5	<0.4	<0.4	0.5	<0.2	<0.2	0.4	2.1	0.5	0.3	1.2	0.4	0.3	1.5	0.4	<0.4	<0.2	0.5	<0.2	<0.2	13	16	5	7	4	8	5	7.1
Molybdenum, dissolved	NA	0.0149	0.0156	0.016	0.015	0.0154	0.0168	0.0152	0.0075	0.0071	0.0079	0.0077	0.0077	0.0073	0.008	0.0044	0.0045	0.0046	0.0044	0.0044	0.0047	0.0045	0.0106	0.0108	0.0114	0.0114	0.0105	0.011	0.0112	0.0103
Molybdenum, total	NA	0.0165	0.0156	0.0169	0.0157	0.0155	0.0154	0.0161	0.0083	0.0081	0.0083	0.0075	0.0073	0.007	0.0081	0.0047	0.0047	0.0048	0.0046	0.0046	0.0046	0.0048	0.0122	0.012	0.0121	0.0112	0.0109	0.0109	0.0111	0.0115
Nickel, dissolved	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nickel, total	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0012	0.001	0.0006	0.0012	0.0007	0.0007	<0.0006	0.0006
Nitrate as N, dissolved	10	<0.02	<0.02	<0.02					<0.02	<0.02	<0.02					0.6	0.62	0.62					<0.02	<0.02	<0.02					
Nitrate/Nitrite as N	10			<0.02	<0.02	<0.02	<0.02	<0.02			<0.02	<0.02	<0.02	<0.02	<0.02			0.58	0.65	0.71	0.62	0.62			0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate/Nitrite as N, dissolved	10	<0.02	<0.02	<0.02					<0.02	<0.02	<0.02					0.6	0.62	0.62					<0.02	<0.02	<0.02					
Nitrite as N, dissolved	1	<0.01	<0.01	<0.01					<0.01	<0.01	<0.01					<0.01	<0.01	<0.01					<0.01	<0.01	<0.01					
Nitrogen, ammonia	NA	0.07	<0.05	0.08	<0.05	<0.05	0.06	<0.05	0.07	0.06	0.08	<0.05	0.06	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.13	0.18	0.09	0.1	0.15	0.12	0.12
pH (standard units)	NA	9.2	9	9.1	9.2	9.1	9.2	9.1	8.5	8.5	8.5	8.4	8.4	8.5	8.4	8.3	8.4	8.3	8.3	8.2	8.4	8.2	8.6	8.5	8.5	8.5	8.4	8.6	8.7	8.5
pH measured at (°C)	NA	20	22	21	21	20	22	19.8	22	20	21	21	21	22	20.8	20	21	21	21	22	22	19.2	21	22	21	21	21	22	22	19.4
Phosphorus, total	NA	0.04	0.05	0.03	0.03	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.01	0.01	0.13	0.14	0.05	0.14	0.05	0.05	0.03	0.04
Potassium, dissolved	NA	6.2	5.9	5.7	5.8	5.5	5.7	5.7	1.2	0.6	0.5	0.5	0.5	0.6	0.7	6.6	6.2	5.9	6	5.1	5.9	5.9	1.1	1.2	0.9	1	0.7	1.1	1.1	1
Potassium, total	NA	5.9	5.8	5.8	5.8	5.5	5.7	6.1	0.6	0.5	0.6	0.5	0.4	0.5	0.6	6.1	5.9	6.2	5.9	5.9	5.9	6	1.4	1.2	1.3	1.2	1.1	1.2	1.1	1.2
Total Dissolved Solids	500*	350	360	368	350	350	340	340	380	370	398	390	380	380	390	240	270	264	270	250	250	260	**570**	**590**	**550**	**540**	490	**510**	500	**510**
Total Suspended Solids	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	<5	6	<5	<5	<5	<5	250	260	180	208	190	200	135	168
Scandium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Scandium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium, dissolved	0.05	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0047	0.0048	0.0044	0.0046	0.0041	0.0044	0.0039	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Selenium, total	0.05	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0043	0.0041	0.0042	0.0042	0.004	0.0039	0.0038	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Silver, dissolved	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Silver, total	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium, dissolved	NA	116	110	108	109	105	108	105	139	129	129	133	129	131	129	42.4	40	38.9	39.1	34.6	38.6	38.2	190	193	188	181	158	175	175	173
Sodium, total	NA	113	110	109	112	111	108	113	137	133	130	132	134	128	132	40.7	38.3	39.9	39.3	39	38.8	38.7	197	185	189	181	177	177	172	173
Strontium, dissolved	NA	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.005	0.04	0.04	0.04	0.04	0.038	0.038	0.035	0.12	0.13	0.12	0.12	0.109	0.12	0.12	0.05	0.05	0.04	0.04	0.035	0.036	0.036	0.036
Strontium, total	NA	<0.01	<0.01	<0.01	<0.01	0.005	<0.005	0.006	0.04	0.04	0.04	0.04	0.039	0.036	0.041	0.12	0.12	0.13	0.12	0.121	0.117	0.119	0.07	0.07	0.06	0.06	0.06	0.056	0.048	0.051
Sulfate	250*	58.04	61.4	59.5	59	59.2	59	56.1	82.55	83.5	80.7	80.2	80.6	80.2	75.6	30.6	32.2	33.7	31.1	31.3	31.2	29.2	167.7	155	152	145	133	142	168	130
Thallium, dissolved	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium, total	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin, dissolved	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin, total	NA	<0.0001	0.0007	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0005	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0004
Titanium, dissolved	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium, total	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.03	0.027	0.02	0.026	0.029	0.026	0.019	0.022
Total Alkalinity	NA	167	164	186	163	141	142	178	197	196	198	216	168	170	206	130	131	129	131	110	124	137	200	200	215	193	182	169	169	207
**

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 5 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		SAGEBRUSH SPRING									SOURDOUGH SPRING LOWER				SOURDOUGH SPRING UPPER						TWIN SPRINGS NORTH						
Analytes	**MCL**	**3/13/13**	**3/13/13**	**6/20/13**	**8/13/13**	**8/13/13**	**11/22/13**	**11/22/13**	**3/16/14**	**6/24/14**	**9/17/14**	**3/17/14**	**6/27/13**	**8/14/13**	**11/23/13**	**3/17/13**	**6/27/13**	**11/23/13**	**3/17/14**	**6/23/14**	**9/16/14**	**3/13/13**	**6/20/13**	**8/14/13**	**11/22/13**	**3/16/14**	**6/23/14**	**9/16/14**
Aluminum, dissolved	0.05*		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	**0.11**	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Aluminum, total	0.05*		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	**0.3**
Antimony, dissolved	0.006		<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Antimony, total	0.006		<0.0004	<0.0004	<0.0008	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	<0.0004	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic, dissolved	0.010		0.007	0.0068	0.0075	0.0076	0.0072	0.0072	0.008	0.0066	0.0074	**0.0264**	**0.0234**	**0.0232**	**0.0238**	**0.0279**	**0.0283**	**0.0311**	**0.0319**	**0.0276**	**0.0276**	**0.0607**	**0.0441**	**0.0463**	**0.045**	**0.0522**	**0.0401**	**0.0497**
Arsenic, total	0.010		0.0069	0.0066	0.0074	0.0071	0.0079	0.0077	0.0071	0.0071	0.007	**0.0229**	**0.0227**	**0.0227**	**0.0231**	**0.0276**	**0.0272**	**0.0279**	**0.0278**	**0.0268**	**0.0278**	**0.061**	**0.0479**	**0.0442**	**0.0449**	**0.0444**	**0.0417**	**0.0466**
Barium, dissolved	2		<0.003	<0.003	<0.003	<0.003	0.004	0.004	0.003	<0.003	<0.003	0.088	0.085	0.087	0.089	0.069	0.066	0.067	0.064	0.067	0.064	0.012	0.011	0.009	0.012	0.01	0.008	0.02
Barium, total	2		<0.003	0.004	<0.003	<0.003	0.004	0.004	0.004	<0.003	<0.003	0.092	0.084	0.087	0.089	0.065	0.066	0.067	0.067	0.072	0.065	0.012	0.012	0.01	0.011	0.01	0.007	0.028
Beryllium, dissolved	0.004		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005
Beryllium, total	0.004		<0.00005	<0.00005	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bicarbonate as CaCO3	NA	150		151	152	152	157	158	128	124	159	112	116	119	124	153	147	149	131	125	149	163	169	168	187	140	139	188
Bismuth, dissolved	NA		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bismuth, total	NA		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Boron, dissolved	NA		0.045	0.04	0.05	0.04	0.06	0.06	0.05	0.05	0.05	0.09	0.07	0.08	0.09	0.11	0.11	0.12	0.12	0.12	0.11	0.089	0.11	0.11	0.11	0.11	0.11	0.1
Boron, total	NA		0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.03	0.04	0.09	0.08	0.08	0.08	0.11	0.12	0.12	0.11	0.11	0.12	0.1	0.1	0.11	0.11	0.1	0.09	0.11
Cadmium, dissolved	0.005		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmium, total	0.005		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium, dissolved	NA		48.9	44.3	43.7	44.9	47	46.6	45.2	45.3	43.9	25.4	23.7	22.6	23.3	36.5	33.6	32.2	34.6	33.3	31.4	28	25.6	24.5	25.3	24.3	25.3	26.1
Calcium, total	NA		45.4	45.9	45.7	45.5	46.6	45.9	46	45	46.9	26.4	23.1	22.8	23.5	35.8	33	32	35.2	34.9	32.5	25.5	25.1	25	25.8	25	25	27.1
Carbonate as CaCO3	NA	3		<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2
Chloride	250*	11.26		11.2	11.4	11.4	10.6	10.6	9.71	10.8	10.2	9.21	6.96	6.75	6.33	14.83	14.9	13.3	14.4	13.4	12.2	8.97	8.36	8.41	8.72	8.82	8.29	8.46
Chromium, dissolved	0.1		0.0011	0.0009	0.001	0.001	0.001	0.0011	0.0013	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.0006	<0.0005
Chromium, total	0.1		0.0012	0.001	0.001	0.0011	0.0011	0.0011	0.0012	0.0013	0.0011	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.0005	0.0007	0.0007	<0.0005
Cobalt, dissolved	NA		0.0002	0.00026	0.00017	0.00011	0.00046	0.00015	0.00053	0.00017	0.00021	0.00008	0.00082	0.00008	0.00007	0.00018	0.00027	0.00007	0.00013	0.00081	0.00033	0.00013	0.00021	0.00017	0.00009	0.00008	0.00049	0.00028
Cobalt, total	NA		0.00006	0.00017	<0.0001	0.0001	0.00009	0.00009	0.00008	0.00009	0.00015	0.00006	<0.00005	<0.00005	<0.00005	0.00005	0.00005	0.00006	0.00009	0.00008	0.00011	0.00007	0.00013	0.0001	0.0001	0.0001	0.00009	0.00027
Conductivity @25C (umhos/cm)	NA	393		382	379	379	389	385	383	393	388	352	310	300	301	425	400	396	427	408	387	442	449	438	441	442	448	468
Copper, dissolved	1.3		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper, total	1.3		<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	0.0014	0.0008	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Cyanide, total	0.2	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide, WAD	0.2	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Fluoride	4	0.43		0.38	0.34	0.34	0.36	0.36	0.32	0.35	0.37	0.33	0.32	0.26	0.29	0.52	0.48	0.44	0.45	0.44	0.44	0.72	0.63	0.6	0.6	0.61	0.6	0.66
Gallium, dissolved	NA		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gallium, total	NA		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hardness as CaCO3	NA		167	150	148	152	159	158	153	153	148	87	81	77	80	132	120	115	123	119	112	137	126	121	124	119	124	126
Hardness as CaCO3 (dissolved)	NA																											
Hardness as CaCO3 (total)	NA																											
Hydroxide as CaCO3	NA	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron, dissolved	0.3*		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Iron, total	0.3*		<0.02	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.05	0.04	0.03	<0.02	<0.02	0.3
Lead, dissolved	0.015		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead, total	0.015		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium, dissolved	NA		0.02	<0.02	<0.02	<0.02	0.02	0.02	0.018	0.017	0.013	0.014	<0.02	<0.02	0.02	<0.02	<0.02	0.02	0.017	0.018	0.017	<0.02	<0.02	<0.02	<0.02	0.013	0.015	0.013
Lithium, total	NA		<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.021	0.017	0.02	0.019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.025	0.018	<0.02	<0.02	<0.02	<0.02	0.017	0.015	0.014
Magnesium, dissolved	NA		10.8	9.6	9.4	9.7	10.1	10.1	9.7	9.6	9.3	5.7	5.3	4.9	5.2	10	8.7	8.4	9	8.6	8.1	16.3	15	14.5	14.9	14.2	14.8	14.7
Magnesium, total	NA		10.2	10	10.4	10	10	9.9	9.8	9.6	10.1	5.8	5	5	5.2	9.6	8.5	8.4	9	9.1	8.6	15.4	14.7	14.6	15.2	14.4	14.5	15.9
Manganese, dissolved	0.05*		<0.0005	0.0009	<0.0005	<0.0005	0.0008	<0.0005	0.0007	<0.0005	<0.0005	0.0038	0.0016	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	0.0033	**0.0809**	0.0239	0.0048	0.009	0.0097	**0.1613**
Manganese, total	0.05*		<0.0005	0.0009	<0.001	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0038	0.0007	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0126	**0.101**	**0.053**	0.0173	0.02	0.0136	**0.216**
Mercury, dissolved (ng/L)	2000		<0.4	0.6	0.3	<0.2	<0.2	<0.2	<0.2	<1	0.2	0.7	1.1	<2	0.4	<0.4	0.7	<0.2	1	0.3	1.1	<0.4	<0.2	<2	<0.2	0.3	<0.2	0.5
Mercury, total (ng/L)	2000		<0.2	1.6	<0.2	<0.2	<0.2	<0.2	0.6	0.3	<0.2	1	<0.2	<0.2	<0.2	0.2	0.5	<0.2	1.4	0.3	0.2	<0.4	2.1	0.3	<0.2	0.7	<0.2	1.3
Molybdenum, dissolved	NA		0.0016	0.0015	0.0018	0.0017	0.0018	0.0018	0.0017	0.0016	0.0018	0.0045	0.0044	0.0039	0.0039	0.0035	0.0037	0.0036	0.0039	0.0036	0.0036	0.0132	0.0099	0.0108	0.0102	0.011	0.01	0.0085
Molybdenum, total	NA		0.0018	0.0017	0.002	0.0019	0.0018	0.0019	0.0017	0.0017	0.0019	0.0043	0.0043	0.0046	0.0043	0.0039	0.0037	0.0037	0.0038	0.0033	0.0038	0.015	0.0107	0.012	0.0108	0.0108	0.0102	0.0091
Nickel, dissolved	NA		<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nickel, total	NA		<0.0006	<0.0006	<0.001	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nitrate as N, dissolved	10	3.06		2.42	2.54	2.55							0.72	0.77		0.08	<0.02					1.02	1.05	1.18				
Nitrate/Nitrite as N	10				2.48	2.45	3.09	3.08	3.48	3.03	3	0.76		0.73	0.8				0.06	0.05	<0.02	<0.02			1.1		1.13	1.28	1.13	0.57
Nitrate/Nitrite as N, dissolved	10	3.06		2.42	2.54	2.55							0.72	0.77		0.08	<0.02					1.02	1.05	1.18				
Nitrite as N, dissolved	1	<0.01		<0.01	<0.01	<0.01							<0.01	<0.01		<0.01	<0.01					<0.01	<0.01	<0.01				
Nitrogen, ammonia	NA		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1
pH (standard units)	NA	8.3		8.2	8.2	8.2	8.2	8.2	8.2	8.3	8.2	8.2	8.1	8.3	8.2	8.2	8.1	8	8.1	8.1	8	8.3	8.3	8.2	8.2	8.2	8.3	8.1
pH measured at (°C)	NA	19		21	22	22	22	21	19	22	19.9	20	22	23	21	21	22	21	19	22	20.1	20	20	21	21	20	22	21.1
Phosphorus, total	NA		0.01	<0.01	0.02	0.02	0.02	0.01	<0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.03	0.03	0.03	0.03	0.02	0.02	0.09	0.07	0.05	0.05	0.05	0.05	0.17
Potassium, dissolved	NA		5.4	4.9	4.9	4.9	5.1	5	4.8	4.9	5	2.7	2.8	2.7	2.7	4.2	4.5	4.2	3.8	4.3	4.5	9.9	9	8.8	8.9	8.5	8.9	9.4
Potassium, total	NA		4.8	4.9	5	5.6	5.1	5	4.7	4.9	5.3	2.6	2.6	2.7	2.8	4.1	4.3	4.2	3.7	4.4	4.6	9.2	8.8	9	9.1	8.5	8.7	9.7
Total Dissolved Solids	500*	290		270	296	298	270	270	270	280	290	260	230	262	220	310	290	280	310	280	260	310	300	330	280	300	160	320
Total Suspended Solids	NA	<5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	30
Scandium, dissolved	NA		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Scandium, total	NA		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium, dissolved	0.05		0.0011	0.0009	0.0011	0.001	0.0011	0.0011	0.0011	0.0011	0.001	0.0023	0.002	0.0019	0.0022	0.0018	0.0013	0.0014	0.0019	0.0013	0.001	0.0041	0.0039	0.0039	0.0045	0.0044	0.0041	0.0026
Selenium, total	0.05		0.0011	0.001	0.001	0.001	0.0011	0.0011	0.001	0.001	0.0009	0.002	0.002	0.0019	0.002	0.0017	0.0012	0.0013	0.0016	0.0011	0.001	0.0038	0.0044	0.004	0.0042	0.0042	0.0039	0.004	0.0025
Silver, dissolved	0.10*		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005
Silver, total	0.10*		<0.00005	<0.00005	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium, dissolved	NA		22.5	19.3	19.5	19.8	20.5	20.4	19.9	19.6	19.1	39.8	35.2	34.2	35.1	43.4	39.1	38.8	40.9	38.3	36	49.8	45.8	44.9	45.9	43.9	45.2	45.5
Sodium, total	NA		20	20	20.7	20.8	20.3	20	20.5	19.5	20.4	41.5	34.1	33.9	34.7	41.6	38.2	38	42	39.8	37.3	45.6	45.1	45.2	46.4	45.9	44.2	47.3
Strontium, dissolved	NA		0.21	0.2	0.2	0.2	0.21	0.21	0.201	0.196	0.191	0.195	0.18	0.18	0.19	0.25	0.24	0.23	0.239	0.234	0.224	0.14	0.15	0.14	0.14	0.134	0.136	0.139
Strontium, total	NA		0.2	0.21	0.21	0.2	0.21	0.2	0.202	0.193	0.207	0.197	0.18	0.18	0.18	0.24	0.23	0.23	0.237	0.244	0.235	0.14	0.14	0.14	0.14	0.135	0.133	0.148
Sulfate	250*	16.72		18.8	22	22.2	17.9	18	15.6	18.2	16.8	30.7	23.2	23.9	22.3	38.18	36.5	33.2	42	36.9	31.3	45.33	44.9	43.2	43.7	44.3	43.5	39.8
Thallium, dissolved	NA		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium, total	NA		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin, dissolved	NA		<0.0001	<0.0001	0.0004	<0.0001	0.0002	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
Tin, total	NA		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
Titanium, dissolved	NA		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium, total	NA		<0.005	<0.005	<0.005	0.008	<0.005	<0.005	0.009	<0.005	0.008	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.016
Total Alkalinity	NA	153		151	152	152	157	158	128	127	159	112	116	119	124	153	147	149	131	125	149	166	169	168	187	140	140	188
Uranium, dissolved	0.030			0.0034	0.004	0.004	0.0038	0.0038	0.0037	0.0032	0.0034	0.0069	0.0047	0.0049	0.0048		0.0026	0.0027	0.0039	0.0026	0.0021		0.004	0.0048	0.0045	0.0044	0.0037	0.0029
Uranium, total	0.030			0.0039	0.0038	0.0038	0.004	0.0039	0.004	0.0036	0.0035	0.0069	0.0048	0.0048	0.0051		0.0026	0.0028	0.0039	0.0025	0.0023		0.0043	0.0046	0.0048	0.0045	0.0039	0.003
Vanadium, dissolved	NA	0.018	0.0171	0.0206	0.0201	0.0205	0.0202	0.0201	0.0176	0.0201	0.0186	0.0154	0.0162	0.0163	0.0273	0.027	0.0284	0.0337	0.0305	0.0271	0.036	0.037	0.0434	0.0406	0.0443	0.0395	0.027
Vanadium, total	NA	0.0191	0.0191	0.0209	0.0206	0.0211	0.0209	0.0197	0.0208	0.0207	0.0169	0.0168	0.0165	0.0169	0.0302	0.0283	0.0287	0.0315	0.0308	0.029	0.0401	0.0412	0.0434	0.0436	0.0422	0.0416	0.0287
Zinc, dissolved	5*		<0.01	0.01	<0.01	<0.01	0.02	0.02	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	0.08	0.17	0.12	0.1	0.1	0.04	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc, total	5*		<0.01	<0.01	0.01	<0.01	0.01	0.02	<0.01	<0.01	0.01	0.02	0.01	<0.01	0.02	0.08	0.16	0.12	0.1	0.1	0.05	0.02	0.04	<0.01	<0.01	0.01	<0.01	<0.01

Table F1. Grassy Mountain Groundwater Quality Results Summary (pg. 6 of 6)

Analytes in mg/L unless noted. MCL column has secondary MCL values indicated by an *. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.

		TWIN SPRINGS SOUTH									WHISKEY SPRING							
Analytes	**MCL**	**3/13/13**	**3/13/13**	**6/20/13**	**8/14/13**	**11/22/13**	**3/16/14**	**6/23/14**	**6/23/14**	**9/16/14**	**3/17/13**	**6/27/13**	**6/27/13**	**8/14/13**	**11/23/13**	**3/16/14**	**6/24/14**	**9/16/14**
Aluminum, dissolved	0.05*	<0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Aluminum, total	0.05*	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Antimony, dissolved	0.006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0007	0.0009	0.0008	0.0008	0.0007	0.0008	0.0007	0.0009
Antimony, total	0.006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0007	0.0008	0.0007	0.0009	0.0008	0.0007	0.0007	0.0007
Arsenic, dissolved	0.010	**0.0433**	**0.0413**	**0.0434**	**0.043**	**0.0412**	**0.0489**	**0.038**	**0.0394**	**0.0418**	**0.0861**	**0.0898**	**0.0889**	**0.0854**	**0.0922**	**0.1039**	**0.0853**	**0.0854**
Arsenic, total	0.010	**0.0445**	**0.0436**	**0.044**	**0.0422**	**0.0435**	**0.0422**	**0.0409**	**0.0409**	**0.0396**	**0.0874**	**0.0846**	**0.0821**	**0.0867**	**0.089**	**0.0867**	**0.0826**	**0.086**
Barium, dissolved	2	0.007	0.008	0.006	0.005	0.009	0.006	0.005	0.005	0.005	0.045	0.045	0.046	0.046	0.049	0.045	0.046	0.045
Barium, total	2	0.008	0.007	0.007	0.005	0.008	0.006	0.004	0.003	0.008	0.045	0.046	0.047	0.047	0.047	0.047	0.046	0.047
Beryllium, dissolved	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005
Beryllium, total	0.004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bicarbonate as CaCO3	NA	157	157	174	173	164	136	132	133	167	130	137	136	135	138	114	115	142
Bismuth, dissolved	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bismuth, total	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05	<0.04	0.04
Boron, dissolved	NA	0.095	0.097	0.11	0.11	0.12	0.11	0.11	0.12	0.1	0.15	0.17	0.18	0.19	0.18	0.17	0.19	0.18
Boron, total	NA	0.1	0.1	0.1	0.11	0.12	0.11	0.09	0.09	0.11	0.17	0.18	0.18	0.19	0.18	0.18	0.17	0.18
Cadmium, dissolved	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmium, total	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium, dissolved	NA	28.2	27.9	26.6	25.6	26.9	25.3	26.8	26.9	26.4	35.2	37.2	37.2	35.3	35.5	34.8	36.9	35.7
Calcium, total	NA	26.3	26.1	26.3	26.2	27.3	26.4	27.3	26.7	26.5	37.1	37.2	36.8	35.9	35.2	35.9	37.1	36.7
Carbonate as CaCO3	NA	3	4	3	3	<2	<2	3	<2	<2	4	<2	<2	<2	<2	<2	<2	<2
Chloride	250*	10.85	10.86	10.8	10.8	10.7	10.6	10.5	10.6	10.3	6.33	7.46	7.23	6.74	6.45	6.53	6.57	6.03
Chromium, dissolved	0.1	0.0007	0.0006	0.0007	0.0008	0.0007	0.0008	0.0008	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium, total	0.1	0.0008	0.0008	0.0007	0.0036	0.0007	0.0008	0.0009	0.001	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Cobalt, dissolved	NA	0.00017	0.00011	0.00015	0.0001	0.00007	0.0001	0.0003	0.00012	0.00034	0.00015	0.00051	0.00022	0.00008	0.00009	0.00011	0.00029	0.00032
Cobalt, total	NA	0.00009	0.00007	0.00009	0.00007	0.00006	0.00007	0.00008	0.00007	0.0001	<0.00005	<0.00005	<0.00005	0.00005	0.00007	0.00006	0.00008	0.00011
Conductivity @25C (umhos/cm)	NA	442	442	450	440	445	445	456	454	452	540	546	542	531	533	536	555	549
Copper, dissolved	1.3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper, total	1.3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Cyanide, total	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide, WAD	0.2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Fluoride	4	0.72	0.73	0.63	0.62	0.63	0.62	0.62	0.63	0.63	0.79	0.73	0.71	0.72	0.66	<0.5	0.55	0.69
Gallium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gallium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hardness as CaCO3	NA	137	135	128	124	130	122	129	129	126	113	118	118	112	113	111	117	114
Hardness as CaCO3 (dissolved)	NA																	
Hardness as CaCO3 (total)	NA																	
Hydroxide as CaCO3	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron, dissolved	0.3*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Iron, total	0.3*	0.05	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead, dissolved	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead, total	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium, dissolved	NA	<0.02	<0.02	<0.02	<0.02	<0.02	0.011	0.013	0.013	0.011	0.1	0.11	0.11	0.1	0.11	0.1	0.106	0.105
Lithium, total	NA	<0.02	<0.02	<0.02	<0.02	<0.02	0.016	0.013	0.013	0.013	0.1	0.11	0.1	0.11	0.11	0.103	0.107	0.113
Magnesium, dissolved	NA	16.1	15.9	15	14.5	15.3	14.3	15	15	14.6	6	6.2	6.2	5.8	5.9	5.8	6.1	6
Magnesium, total	NA	15.3	15.1	14.9	14.6	15.4	14.6	15.2	14.9	15.4	6.3	6.1	6.1	6	5.9	5.8	6.2	6.3
Manganese, dissolved	0.05*	0.006	0.0057	0.0043	0.0007	0.0031	0.0034	0.0018	0.0015	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese, total	0.05*	0.0198	0.0136	0.0065	0.003	0.0057	0.0083	0.0043	0.0024	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Mercury, dissolved (ng/L)	2000	<0.4	<0.4	<0.2	<2	<0.2	0.3	<0.2	<0.2	<0.2	<0.4	0.4	0.4	<2	<0.2	<0.2	<0.2	0.9
Mercury, total (ng/L)	2000	<0.4	<1	1.9	0.2	<0.2	0.7	<0.2	<0.2	<0.2	0.3	0.4	0.3	<0.2	<0.2	0.5	<0.2	<0.2
Molybdenum, dissolved	NA	0.0095	0.0088	0.0092	0.0097	0.009	0.0098	0.009	0.009	0.0098	0.0199	0.021	0.0214	0.0209	0.0214	0.0211	0.02	0.0207
Molybdenum, total	NA	0.0106	0.0107	0.0098	0.0109	0.0097	0.0099	0.0093	0.009	0.0104	0.0228	0.0212	0.021	0.0236	0.0212	0.0214	0.0199	0.0221
Nickel, dissolved	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nickel, total	NA	<0.0006	<0.0006	<0.0006	0.0013	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Nitrate as N, dissolved	10	1.96	1.95	1.89	2.04						0.21	0.05	0.06	0.12				
Nitrate/Nitrite as N	10				1.94	2.02	2.32	1.92	1.93	1.87				0.11	0.23	0.28	0.03	0.18
Nitrate/Nitrite as N, dissolved	10	1.96	1.95	1.89	2.04						0.22	0.05	0.06	0.12				
Nitrite as N, dissolved	1	<0.01	<0.01	<0.01	<0.01						0.01	<0.01	<0.01	<0.01				
Nitrogen, ammonia	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH (standard units)	NA	8.3	8.3	8.3	8.3	8.2	8.2	8.3	8.3	8.2	8.3	8.2	8.2	8.2	8.2	8.2	8.3	8.2
pH measured at (°C)	NA	19	19	20	21	21	19	23	22	20.8	20	23	22	22	21	20	22	20.3
Phosphorus, total	NA	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.05	0.03	0.03	0.03	0.02	0.03
Potassium, dissolved	NA	9.4	9.6	9.1	8.9	9.1	8.4	9	9	8.9	5.7	6	6	5.9	5.8	5.5	5.9	6
Potassium, total	NA	9	8.9	8.9	8.9	9.2	8.6	9	8.8	9	5.9	5.9	5.8	6	5.9	5.5	5.8	6
Total Dissolved Solids	500*	310	320	310	330	290	340	300	300	310	400	400	390	426	390	390	380	390
Total Suspended Solids	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Scandium, dissolved	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Scandium, total	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium, dissolved	0.05	0.0046	0.0047	0.0044	0.004	0.0049	0.0046	0.0046	0.0046	0.0044	0.0022	0.0022	0.0022	0.0018	0.0022	0.0023	0.0022	0.002
Selenium, total	0.05	0.0042	0.0042	0.0046	0.0042	0.0043	0.004	0.0042	0.0042	0.0039	0.0021	0.0021	0.0021	0.002	0.0021	0.0019	0.0019	0.0019
Silver, dissolved	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005
Silver, total	0.10*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium, dissolved	NA	46.3	46.7	42.7	42	44	41.1	42.7	42.8	42	68.1	70.8	70.6	68.8	69.8	67.4	69.8	68.4
Sodium, total	NA	43.1	42.5	42.5	42.2	43.9	43.4	43.2	42.2	42.6	71.3	70.7	69.6	69.3	68.5	70	70	70.3
Strontium, dissolved	NA	0.16	0.16	0.16	0.15	0.16	0.145	0.15	0.15	0.146	0.15	0.16	0.16	0.15	0.16	0.151	0.157	0.151
Strontium, total	NA	0.15	0.15	0.15	0.15	0.15	0.149	0.151	0.147	0.151	0.15	0.16	0.16	0.16	0.15	0.153	0.156	0.159
Sulfate	250*	45.39	45.5	42.7	46.3	43.7	43.7	44	43.9	42	128.08	137	133	123	125	119	125	118
Thallium, dissolved	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium, total	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin, dissolved	NA	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001
Tin, total	NA	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium, dissolved	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium, total	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.007	<0.005	<0.005
Total Alkalinity	NA	160	161	178	175	164	136	135	135	167	134	137	136	135	138	114	117	142
Uranium, dissolved	0.030			0.0033	0.0038	0.0034	0.0034	0.0028	0.0032	0.0033		0.0054	0.0055	0.0061	0.0058	0.0057	0.0047	0.0053
Uranium, total	0.030			0.0035	0.0037	0.0037	0.0035	0.0032	0.0032	0.0034		0.0055	0.0054	0.0058	0.0058	0.0059	0.0051	0.0056
Vanadium, dissolved	NA	0.0418	0.04	0.0427	0.0448	0.0446	0.0483	0.0416	0.0419	0.0438	0.0199	0.0215	0.0206	0.0215	0.0221	0.0243	0.0207	0.0208
Vanadium, total	NA	0.0462	0.0459	0.0436	0.0449	0.0458	0.0452	0.0441	0.0449	0.0443	0.0223	0.0217	0.0215	0.0223	0.0222	0.0218	0.0216	0.0228
Zinc, dissolved	5*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc, total	5*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01

Table F2. Grassy Mountain Baseline Spring Water Quality Results (Above Drinking Water MCLs)

MCL column has secondary MCL values indicated by an *		DEPOSIT STOCK TANK								GOVERNMENT CORRAL SPRING	LOWE SPRING		POISON SPRING							SOURDOUGH SPRING LOWER			
ANALYTE	**MCL**	3/17/13	6/20/13	8/13/13	11/22/13	3/16/14	3/16/14	6/24/14	9/17/14	11/22/13	3/13/13	6/26/13	6/26/13	8/13/13	11/21/13	3/16/14	6/24/14	9/16/14	3/26/13	3/17/14	8/14/13	6/27/13	11/23/13
Aluminum, dissolved	0.05*																						
Aluminum, total	0.05*									0.06													
Antimony, dissolved	0.006																						
Antimony, total	0.006																						
Arsenic, dissolved	0.010	0.0257	0.0287	0.033	0.0249	0.0301	0.0299	0.0262	0.0262				0.0364	0.0352	0.0356	0.0396	0.0348	0.034	0.036	0.0264	0.0232	0.0234	0.0238
Arsenic, total	0.010	0.0265	0.029	0.0307	0.0252	0.0257	0.0252	0.0278	0.027				0.0333	0.0335	0.0371	0.0337	0.035	0.0343	0.036	0.0229	0.0227	0.0227	0.0231
Chromium, total	0.1																						
Iron, dissolved	0.3*																						
Iron, total	0.3*																						
Lead, total	0.015																						
Manganese, dissolved	0.05*																						
Manganese, total	0.05*																						
Total Dissolved Solids (TDS)	500*										570	540											
Sulfate	250*																						

MCL column has secondary MCL values indicated by an *		SOURDOUGH SPRING UPPER						TWIN SPRINGS NORTH							TWIN SPRINGS SOUTH							
ANALYTE	**MCL**	6/27/13	3/17/13	11/23/13	3/17/14	6/23/14	9/16/14	3/13/13	6/20/13	8/14/13	11/22/13	3/16/14	6/23/14	9/16/14	3/13/13	3/13/13	6/20/13	8/14/13	11/22/13	3/16/14	6/23/14	6/23/14	9/16/14
Aluminum, dissolved	0.05*							0.11															
Aluminum, total	0.05*													0.3									
Antimony, dissolved	0.006																						
Antimony, total	0.006																						
Arsenic, dissolved	0.010	0.0283	0.0279	0.0311	0.0319	0.0276	0.0276	0.0607	0.0441	0.0463	0.045	0.0522	0.0401	0.0497	0.0433	0.0413	0.0434	0.043	0.0412	0.0489	0.038	0.0394	0.0418
Arsenic, total	0.010	0.0272	0.0276	0.0279	0.0278	0.0268	0.0278	0.061	0.0479	0.0442	0.0449	0.0444	0.0417	0.0466	0.0445	0.0436	0.044	0.0422	0.0435	0.0422	0.0409	0.0409	0.0396
Chromium, total	0.1																						
Iron, dissolved	0.3*																						
Iron, total	0.3*																						
Lead, total	0.015																						
Manganese, dissolved	0.05*								0.0809					0.1613									
Manganese, total	0.05*								0.101	0.053				0.216									
Total Dissolved Solids (TDS)	500*																						
Sulfate	250*																						

MCL column has secondary MCL values indicated by an *		WHISKEY SPRING							
ANALYTE	**MCL**	6/27/13	6/27/13	8/14/13	11/23/13	3/16/14	6/24/14	9/16/14	3/17/13
Aluminum, dissolved	0.05*								
Aluminum, total	0.05*								
Antimony, dissolved	0.006								
Antimony, total	0.006								
Arsenic, dissolved	0.010	0.0898	0.0889	0.0854	0.0922	0.1039	0.0853	0.0854	0.0861
Arsenic, total	0.010	0.0846	0.0821	0.0867	0.089	0.0867	0.0826	0.086	0.0874
Chromium, total	0.1								
Iron, dissolved	0.3*								
Iron, total	0.3*								
Lead, total	0.015								
Manganese, dissolved	0.05*								
Manganese, total	0.05*								
Total Dissolved Solids (TDS)	500*								
Sulfate	250*								

Table F3. Grassy Mountain Baseline Wells Water Quality Results (Above Drinking Water MCLs)

MCL column has secondary MCL values indicated by an *		59760								59761							59762	59763								59766						
ANALYTE	**MCL**	3/26/13	6/18/13	8/8/13	11/24/13	3/24/14	3/24/14	6/25/14	9/11/14	3/18/13	6/18/13	8/6/13	11/21/13	3/18/14	6/27/14	9/15/14	12/6/17	3/18/13	6/18/13	8/7/13	11/24/13	3/24/14	6/27/14	9/15/14	9/15/14	3/14/13	6/17/13	8/8/13	11/24/13	3/18/14	6/25/14	9/11/14
Aluminum, dissolved	0.05*																														
Aluminum, total	0.05*	0.12		0.15	0.37	0.59	0.37	0.22	0.74								3.37	2.07	0.1		0.14	0.12		0.09	0.12	25.6	8.36	1.84	3.7	2.9	4.36	7.26
Antimony, dissolved	0.006																0.298															
Antimony, total	0.006																0.21															
Arsenic, dissolved	0.010	0.0278	0.0263	0.0237	0.0285	0.0282	0.0221	0.0268	0.0271	0.0246	0.0234	0.0243	0.024	0.0227	0.0228	0.0223	0.018	0.0839	0.0609	0.0643	0.0713	0.0688	0.0578	0.0621	0.066	0.204	0.2094	0.1836	0.1958	0.1887	0.187	0.1644
Arsenic, total	0.010	0.0283	0.0268	0.0267	0.0275	0.0245	0.0251	0.0268	0.0258	0.0241	0.024	0.024	0.0244	0.0219	0.0228	0.0232	0.163	0.0787	0.0606	0.06	0.0658	0.0614	0.0624	0.0664	0.0669	0.276	0.259	0.206	0.202	0.191	0.1847	0.1927
Chromium, total	0.1																														
Iron, dissolved	0.3*																										0.97	0.9	1.06	0.89	0.86	0.71
Iron, total	0.3*								0.37								4.54	1.45								23	9.12	2.77	5.38	3.9	5.04	7.31
Lead, total	0.015																									0.019						
Manganese, dissolved	0.05*																0.535		0.1974	0.1098	0.096	0.0838	0.0856	0.0867	0.0857	0.263	0.475	0.422	0.442	0.432	0.407	0.389
Manganese, total	0.05*																0.589	0.23	0.205	0.1179	0.1235	0.1029	0.1007	0.0997	0.0992	0.73	0.688	0.452	0.506	0.49	0.486	0.519
Total Dissolved Solids (TDS)	500*																648	1090	1130	1220	1130	1170	1130	1160	1170	660	650	674	650	650	640	670
Sulfate	250*																333	575.7	568	626	569	580	612	582	377	308.57	311	307	302	305	320	300

MCL column has secondary MCL values indicated by an *		59772								BISHOP	BLM						BLM 12 VOLS	BLM 6 VOLS	GMW 17-32	GMW 17-33	GW-1								
ANALYTE	**MCL**	3/18/13	3/18/13	6/18/13	8/8/13	11/24/13	3/24/14	6/25/14	9/11/14	9/15/14	3/18/13	6/18/13	8/6/13	11/24/13	3/24/14	6/27/14	9/15/14	3/18/13	3/18/13	12/5/18	12/14/17	3/14/13	6/17/13	8/6/13	11/21/13	3/18/14	6/25/14	9/11/14	6/17/13
Aluminum, dissolved	0.05*																			0.07									
Aluminum, total	0.05*																			0.0371	0.0217								
Antimony, dissolved	0.006																			0.0374	0.0244								
Antimony, total	0.006																												
Arsenic, dissolved	0.010	0.041	0.0398	0.0376	0.0367	0.0394	0.0372	0.0366	0.0381		1.46	1.57	2.88	3.42	3.63	3.9	4.44	2.98	2.22	0.0789	0.106	0.0312	0.0304	0.0307	0.0317	0.0294	0.0309	0.0304	0.031
Arsenic, total	0.010	0.0366	0.0374	0.038	0.0368	0.038	0.0348	0.037	0.0352	0.0101	1.54	1.63	2.83	3.27	3.75	4.63	4.54	3.38	2.41	0.0799	0.107	0.0306	0.03	0.0296	0.0313	0.0283	0.0302	0.0268	0.0297
Chromium, total	0.1																												
Iron, dissolved	0.3*										55	54.6	113	146	163	189	200	131	92.2										
Iron, total	0.3*										47.4	47.6	111	139	156	186	201	129	88.9	0.52									
Lead, total	0.015																												
Manganese, dissolved	0.05*										0.57	0.532	1.05	1.28	1.31	1.53	1.67	1.29	0.93										
Manganese, total	0.05*										0.43	0.48	0.99	1.2	1.34	1.6	1.65	1.24	0.9										
Total Dissolved Solids (TDS)	500*										1130	1080	1570	1450	1640	1800	1850			830									
Sulfate	250*										578.3	541	941	1040	1070	1220	1200	830	1130	532									

MCL column has secondary MCL values indicated by an *		GW-4								PROD-1							PW-1							PW-4					
ANALYTE	**MCL**	3/14/13	6/17/13	8/6/13	11/21/13	3/18/14	6/27/14	9/11/14	11/21/13	3/17/13	6/20/13	8/13/13	11/22/13	3/16/14	6/24/14	9/16/14	3/26/13	6/17/13	8/6/13	11/21/13	3/18/14	6/25/14	9/11/14	3/14/13	6/17/13	8/6/13	11/21/13	3/18/14	6/25/14	9/11/14	6/25/14
Aluminum, dissolved	0.05*					0.06	0.07										0.08							0.08		0.07		0.11		0.08	0.08
Aluminum, total	0.05*	1.68	0.95	0.68	1.13	1.09	0.6	0.83	0.84								0.23		0.06	0.08				8.11	7.75	5.98	6.52	6.11	5.82	4.7	3.94
Antimony, dissolved	0.006																														
Antimony, total	0.006																														
Arsenic, dissolved	0.010	0.0119	0.0115	0.012	0.0118	0.0109	0.0109	0.0109	0.0119	0.0631	0.0604	0.0616	0.0629	0.071	0.0581	0.0624	0.0317	0.0309	0.0302	0.0315	0.0286	0.0313	0.0267	0.013	0.0126	0.0137	0.0133	0.0127	0.0131	0.0116	0.0129
Arsenic, total	0.010	0.0118	0.0118	0.0126	0.0116	0.0111	0.0114	0.0116	0.0113	0.061	0.0602	0.0598	0.0615	0.0589	0.0581	0.0579	0.0331	0.0307	0.0294	0.031	0.0282	0.0288	0.0304	0.0183	0.017	0.0168	0.0221	0.0148	0.016	0.0157	0.0148
Chromium, total	0.1																														
Iron, dissolved	0.3*																														
Iron, total	0.3*	0.59	0.36		0.42	0.41		0.36	0.33								1.04	0.68		0.32				7.99	7.3	5.82	23.5	6.06	5.96	4.85	3.98
Lead, total	0.015																														
Manganese, dissolved	0.05*													0.0513																	
Manganese, total	0.05*																							0.0971	0.0753	0.0689	0.1679	0.064	0.0602	0.0522	0.0509
Total Dissolved Solids (TDS)	500*																							570	590	550	540		510	510	
Sulfate	250*																														

Table F4 Grassy Mountain Baseline Spring Water Quality Results (above ODEQ aquatic life water quality criteria standards)

ANALYTE	CMC (mg/L)	CCC (mg/L)	HHC (mg/L)	DEPOSIT STOCK TANK								GOVERNMENT CORRAL SPRING							
				3/17/13	6/20/13	8/13/13	11/22/13	3/16/14	3/16/14	6/24/14	9/17/14	3/13/13	6/20/13	8/7/13	11/22/13	3/16/14	6/24/14	9/17/14	9/17/14
Arsenic, dissolved	0.34	0.15	0.002	0.0257	0.0287	0.033	0.0249	0.0301	0.0299	0.0262	0.0262	0.0079	0.0075	0.0073	0.0079	0.0084	0.0073	0.0075	0.0075
Arsenic, total	0.34	0.15	0.002	0.0265	0.029	0.0307	0.0252	0.0257	0.0252	0.0278	0.027	0.0078	0.0077	0.0074	0.0081	0.0073	0.0072	0.0075	0.0076
Selenium, dissolved	0.0239	0.0042	0.120	0.0059	0.0051	0.0057	0.0047	0.006	0.0059	0.0053	0.0045								
Selenium, total	0.024	0.0046	0.120	0.0058	0.0055	0.005		0.0051	0.005	0.0048									
Zinc, dissolved	VARIES	VARIES	2.1																
Zinc, dissolved	VARIES	VARIES	2.1																

ANALYTE	CMC (mg/L)	CCC (mg/L)	HHC (mg/L)	POISON SPRING							PROD-1						
				3/26/13	6/26/13	8/13/13	11/21/13	3/16/14	6/24/14	9/16/14	3/26/13	6/26/13	8/13/13	11/21/13	3/16/14	6/24/14	9/16/14
Arsenic, dissolved	0.34	0.15	0.002	0.036	0.0364	0.0352	0.0356	0.0396	0.0348	0.034	0.0631	0.0604	0.0616	0.0629	0.071	0.0581	0.0624
Arsenic, total	0.34	0.15	0.002	0.036	0.0333	0.0335	0.0371	0.0337	0.035	0.0343	0.061	0.0602	0.0598	0.0615	0.0589	0.0581	0.0579
Selenium, dissolved	0.0239	0.0042	0.120														
Selenium, total	0.024	0.0046	0.120														
Zinc, dissolved	VARIES	VARIES	2.1														
Zinc, dissolved	VARIES	VARIES	2.1														

ANALYTE	CMC (mg/L)	CCC (mg/L)	HHC (mg/L)	SAGEBRUSH SPRING									SOURDOUGH SPRING LOWER			
				3/13/13	6/20/13	8/13/13	8/13/13	11/22/13	11/22/13	3/16/14	6/24/14	9/17/14	3/17/13	6/27/13	8/14/13	11/23/13
Arsenic, dissolved	0.34	0.15	0.002	0.007	0.0068	0.0075	0.0076	0.0072	0.0072	0.008	0.0066	0.0074	0.0264	0.0234	0.0232	0.0238
Arsenic, total	0.34	0.15	0.002	0.0069	0.0066	0.0074	0.0071	0.0079	0.0077	0.0071	0.0071	0.007	0.0229	0.0227	0.0227	0.0231
Selenium, dissolved	0.0239	0.0042	0.120													
Selenium, total	0.024	0.0046	0.120													
Zinc, dissolved	VARIES	VARIES	2.1													
Zinc, dissolved	VARIES	VARIES	2.1													

ANALYTE	CMC (mg/L)	CCC (mg/L)	HHC (mg/L)	SOURDOUGH SPRING UPPER						TWIN SPRINGS NORTH						
				3/17/13	6/27/13	11/23/13	3/17/14	6/23/14	9/16/14	3/13/13	6/20/13	8/14/13	11/22/13	3/16/14	6/23/14	9/16/14
Arsenic, dissolved	0.34	0.15	0.002	0.0279	0.0283	0.0311	0.0319	0.0276	0.0276	0.0607	0.0441	0.0463	0.045	0.0522	0.0401	0.0497
Arsenic, total	0.34	0.15	0.002	0.0276	0.0272	0.0279	0.0278	0.0268	0.0278	0.061	0.0479	0.0442	0.0449	0.0444	0.0417	0.0466
Selenium, dissolved	0.0239	0.0042	0.120										0.0045	0.0044		
Selenium, total	0.024	0.0046	0.120													
Zinc, dissolved	VARIES	VARIES	2.1		0.17											
Zinc, dissolved	VARIES	VARIES	2.1		0.16											

ANALYTE	CMC (mg/L)	CCC (mg/L)	HHC (mg/L)	TWIN SPRINGS SOUTH									WHISKEY SPRING							
				3/13/13	3/13/13	6/20/13	8/14/13	11/22/13	3/16/14	6/23/14	6/23/14	9/16/14	3/17/13	6/27/13	6/27/13	8/14/13	11/23/13	3/16/14	6/24/14	9/16/14
Arsenic, dissolved	0.34	0.15	0.002	0.007	0.0068	0.0075	0.0076	0.0072	0.0072	0.008	0.0066	0.0074	0.0861	0.0898	0.0889	0.0854	0.0922	0.1039	0.0853	0.0854
Arsenic, total	0.34	0.15	0.002	0.0069	0.0066	0.0074	0.0071	0.0079	0.0077	0.0071	0.0071	0.007	0.0874	0.0846	0.0821	0.0867	0.089	0.0867	0.0826	0.086
Selenium, dissolved	0.0239	0.0042	0.120	0.0046	0.0047	0.0044		0.0049	0.0046	0.0046	0.0046	0.0044								
Selenium, total	0.024	0.0046	0.120																	
Zinc, dissolved	VARIES	VARIES	2.1																	
Zinc, dissolved	VARIES	VARIES	2.1																	

Values are colored the same as the criteria which they exceeded.

Table F5, Manual Well Water Level Measurements

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	2974	107462	59760	3/26/2013	89.65	3672.45	Hole near top of casing
MALH	2974	107462	59760	6/18/2013	89.82	3672.28	Hole near top of casing
MALH	2974	107462	59760	8/8/2013	89.86	3672.24	Hole near top of casing
MALH	2974	107462	59760	11/24/2013	90.06	3672.04	Hole near top of casing
MALH	2974	107462	59760	3/24/2014	90.23	3671.87	Hole near top of casing
MALH	2974	107462	59760	6/25/2014	89.09	3673.01	Hole near top of casing
MALH	2974	107462	59760	9/11/2014	89.18	3672.92	Hole near top of casing
MALH	2974	107462	59760	12/16/2014	89.19	3672.91	Hole near top of casing
MALH	2974	107462	59760	2/25/2015	89.42	3672.68	Hole near top of casing
MALH	2974	107462	59760	5/6/2015	89.38	3672.72	Hole near top of casing
MALH	2974	107462	59760	9/23/2015	89.58	3672.52	Hole near top of casing
MALH	2974	107462	59760	12/16/2015	89.67	3672.43	Hole near top of casing
MALH	2974	107462	59760	9/29/2016	90.03	3672.07	Hole near top of casing
MALH	2974	107462	59760	12/21/2016	90.35	3671.75	Hole near top of casing
MALH	2974	107462	59760	3/22/2017	90.22	3671.88	Hole near top of casing
MALH	2974	107462	59760	6/22/2017	88.22	3673.88	Hole near top of casing
MALH	2974	107462	59760	9/26/2017	88.16	3673.94	Hole near top of casing
MALH	2974	107462	59760	11/29/2017	88.32	3673.78	Hole near top of casing
MALH	2974	107462	59760	3/7/2018	88.32	3673.78	Hole near top of casing
MALH	2974	107462	59760	6/26/2018	88.49	3673.61	Hole near top of casing
MALH	2974	107462	59760	9/26/2018	88.67	3673.43	Hole near top of casing
MALH	2993	109400	59761	3/18/2013	89.77	3672.45	Top of 1" sounding tube coupler
MALH	2993	109400	59761	6/18/2013	89.79	3672.43	Top of 1" sounding tube coupler
MALH	2993	109400	59761	8/6/2013	89.91	3672.31	Top of 1" sounding tube coupler
MALH	2993	109400	59761	11/21/2013	89.94	3672.28	Top of 1" sounding tube coupler
MALH	2993	109400	59761	3/18/2014	90.22	3672.00	Top of 1" sounding tube coupler
MALH	2993	109400	59761	6/27/2014	89.22	3673.00	Top of 1" sounding tube coupler
MALH	2993	109400	59761	9/15/2014	89.29	3672.93	Top of 1" sounding tube coupler
MALH	2993	109400	59761	12/16/2014	89.27	3672.95	Top of 1" sounding tube coupler
MALH	2993	109400	59761	2/25/2015	89.46	3672.76	Top of 1" sounding tube coupler
MALH	2993	109400	59761	5/6/2015	89.45	3672.77	Top of 1" sounding tube coupler
MALH	2993	109400	59761	9/23/2015	89.64	3672.58	Top of 1" sounding tube coupler
MALH	2993	109400	59761	12/16/2015	89.75	3672.47	Top of 1" sounding tube coupler
MALH	2993	109400	59761	9/29/2016	90.12	3672.10	Top of 1" sounding tube coupler
MALH	2993	109400	59761	12/21/2016	90.36	3671.86	Top of 1" sounding tube coupler
MALH	2993	109400	59761	3/22/2017	90.31	3671.91	Top of 1" sounding tube coupler
MALH	2993	109400	59761	6/22/2017	88.25	3673.97	Top of 1" sounding tube coupler
MALH	2993	109400	59761	9/26/2017	88.22	3674.00	Top of 1" sounding tube coupler
MALH	2993	109400	59761	11/29/2017	88.39	3673.83	Top of 1" sounding tube coupler
MALH	2993	109400	59761	3/7/2018	88.41	3673.81	Top of 1" sounding tube coupler
MALH	2993	109400	59761	6/26/2018	88.54	3673.68	Top of 1" sounding tube coupler
MALH	2993	109400	59761	9/26/2018	88.74	3673.48	Top of 1" sounding tube coupler
MALH	2976	109371	59762	3/18/2013	619.65	3105.14	Top of 4" pipe within surface casing
MALH	2976	109371	59762	6/20/2013	619.38	3105.41	Top of 4" pipe within surface casing
MALH	2976	109371	59762	8/8/2013	619.42	3105.37	Top of 4" pipe within surface casing
MALH	2976	109371	59762	11/25/2013	619.59	3105.20	Top of 4" pipe within surface casing
MALH	2976	109371	59762	3/24/2014	619.97	3104.82	Top of 4" pipe within surface casing
MALH	2976	109371	59762	6/25/2014	619.60	3105.19	Top of 4" pipe within surface casing
MALH	2976	109371	59762	9/15/2014	619.79	3105.00	Top of 4" pipe within surface casing
MALH	2976	109371	59762	12/16/2014	619.74	3105.05	Top of 4" pipe within surface casing
MALH	2976	109371	59762	2/25/2015	619.93	3104.86	Top of 4" pipe within surface casing
MALH	2976	109371	59762	5/6/2015	619.84	3104.95	Top of 4" pipe within surface casing
MALH	2976	109371	59762	9/23/2015	619.93	3104.86	Top of 4" pipe within surface casing
MALH	2976	109371	59762	12/16/2015	619.99	3104.80	Top of 4" pipe within surface casing
MALH	2976	109371	59762	9/29/2016	620.15	3104.64	Top of 4" pipe within surface casing
MALH	2976	109371	59762	12/21/2016	620.34	3104.45	Top of 4" pipe within surface casing
MALH	2976	109371	59762	3/22/2017	620.12	3104.67	Top of 4" pipe within surface casing
MALH	2976	109371	59762	6/22/2017	620.30	3104.49	Top of 4" pipe within surface casing
MALH	2976	109371	59762	9/26/2017	620.42	3104.37	Top of 4" pipe within surface casing
MALH	2976	109371	59762	11/29/2017	620.63	3104.16	Top of 4" pipe within surface casing
MALH	2976	109371	59762	3/7/2018	621.63	3103.16	Top of 4" pipe within surface casing
MALH	2976	109371	59762	6/26/2018	621.07	3103.72	Top of 4" pipe within surface casing
MALH	2976	109371	59762	9/26/2018	621.39	3103.40	Top of 4" pipe within surface casing
MALH	2994	109356	59763	3/18/2013	279.86	3239.56	Top of 1" sounding tube coupler
MALH	2994	109356	59763	6/18/2013	279.67	3239.75	Top of 1" sounding tube coupler
MALH	2994	109356	59763	8/7/2013	279.97	3239.45	Top of 1" sounding tube coupler
MALH	2994	109356	59763	11/24/2013	279.87	3239.55	Top of 1" sounding tube coupler
MALH	2994	109356	59763	3/24/2014	280.14	3239.28	Top of 1" sounding tube coupler
MALH	2994	109356	59763	6/27/2014	279.88	3239.54	Top of 1" sounding tube coupler
MALH	2994	109356	59763	9/15/2014	280.08	3239.34	Top of 1" sounding tube coupler
MALH	2994	109356	59763	12/16/2014	279.95	3239.47	Top of 1" sounding tube coupler
MALH	2994	109356	59763	2/25/2015	280.17	3239.25	Top of 1" sounding tube coupler
MALH	2994	109356	59763	5/6/2015	279.90	3239.52	Top of 1" sounding tube coupler
MALH	2994	109356	59763	9/23/2015	280.18	3239.24	Top of 1" sounding tube coupler
MALH	2994	109356	59763	12/16/2015	280.01	3239.41	Top of 1" sounding tube coupler

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	2994	109356	59763	9/29/2016	280.16	3239.26	Top of 1" sounding tube coupler
MALH	2994	109356	59763	12/21/2016	280.63	3238.79	Top of 1" sounding tube coupler
MALH	2994	109356	59763	3/22/2017	280.05	3239.37	Top of 1" sounding tube coupler
MALH	2994	109356	59763	6/22/2017	280.21	3239.21	Top of 1" sounding tube coupler
MALH	2994	109356	59763	9/26/2017	280.39	3239.03	Top of 1" sounding tube coupler
MALH	2994	109356	59763	11/29/2017	280.56	3238.86	Top of 1" sounding tube coupler
MALH	2994	109356	59763	3/7/2018	280.29	3239.13	Top of 1" sounding tube coupler
MALH	2994	109356	59763	6/26/2018	280.25	3239.17	Top of 1" sounding tube coupler
MALH	2994	109356	59763	9/26/2018	280.39	3239.03	Top of 1" sounding tube coupler
MALH	2986	107466	59764	3/18/2013	273.18	3238.69	Top of 4" pipe within surface casing
MALH	2986	107466	59764	6/20/2013	273.12	3238.74	Top of 4" pipe within surface casing
MALH	2986	107466	59764	8/7/2013	273.08	3238.78	Top of 4" pipe within surface casing
MALH	2986	107466	59764	11/24/2013	273.23	3238.63	Top of 4" pipe within surface casing
MALH	2986	107466	59764	3/24/2014	273.37	3238.50	Top of 4" pipe within surface casing
MALH	2986	107466	59764	6/27/2014	273.08	3238.78	Top of 4" pipe within surface casing
MALH	2986	107466	59764	9/15/2014	273.19	3238.67	Top of 4" pipe within surface casing
MALH	2986	107466	59764	12/16/2014	273.09	3238.77	Top of 4" pipe within surface casing
MALH	2986	107466	59764	2/25/2015	273.30	3238.56	Top of 4" pipe within surface casing
MALH	2986	107466	59764	5/6/2015	273.15	3238.71	Top of 4" pipe within surface casing
MALH	2986	107466	59764	9/23/2015	273.34	3238.52	Top of 4" pipe within surface casing
MALH	2986	107466	59764	12/16/2015	273.30	3238.56	Top of 4" pipe within surface casing
MALH	2986	107466	59764	9/29/2016	273.54	3238.32	Top of 4" pipe within surface casing
MALH	2986	107466	59764	12/21/2016	273.84	3238.02	Top of 4" pipe within surface casing
MALH	2986	107466	59764	3/22/2017	273.27	3238.59	Top of 4" pipe within surface casing
MALH	2986	107466	59764	6/22/2017	273.32	3238.54	Top of 4" pipe within surface casing
MALH	2986	107466	59764	9/26/2017	273.52	3238.34	Top of 4" pipe within surface casing
MALH	2986	107466	59764	11/29/2017	273.63	3238.23	Top of 4" pipe within surface casing
MALH	2986	107466	59764	3/7/2018	273.43	3238.43	Top of 4" pipe within surface casing
MALH	2986	107466	59764	6/26/2018	273.50	3238.36	Top of 4" pipe within surface casing
MALH	2986	107466	59764	9/26/2018	273.62	3238.24	Top of 4" pipe within surface casing
MALH	2979	107468	59766	3/14/2013	30.03	3429.72	Top of 1" sounding tube coupler
MALH	2979	107468	59766	6/17/2013	30.44	3429.31	Top of 1" sounding tube coupler
MALH	2979	107468	59766	8/8/2013	30.67	3429.08	Top of 1" sounding tube coupler
MALH	2979	107468	59766	11/24/2013	31.02	3428.73	Top of 1" sounding tube coupler
MALH	2979	107468	59766	3/18/2014	31.36	3428.39	Top of 1" sounding tube coupler
MALH	2979	107468	59766	6/25/2014	31.58	3428.17	Top of 1" sounding tube coupler
MALH	2979	107468	59766	9/11/2014	31.80	3427.95	Top of 1" sounding tube coupler
MALH	2979	107468	59766	12/16/2014	31.95	3427.80	Top of 1" sounding tube coupler
MALH	2979	107468	59766	2/25/2015	32.06	3427.69	Top of 1" sounding tube coupler
MALH	2979	107468	59766	5/6/2015	32.18	3427.57	Top of 1" sounding tube coupler
MALH	2979	107468	59766	9/23/2015	32.41	3427.34	Top of 1" sounding tube coupler
MALH	2979	107468	59766	12/16/2015	32.47	3427.28	Top of 1" sounding tube coupler
MALH	2979	107468	59766	9/29/2016	32.77	3426.98	Top of 1" sounding tube coupler
MALH	2979	107468	59766	12/21/2016	32.88	3426.87	Top of 1" sounding tube coupler
MALH	2979	107468	59766	3/22/2017	32.54	3427.21	Top of 1" sounding tube coupler
MALH	2979	107468	59766	6/22/2017	32.74	3427.01	Top of 1" sounding tube coupler
MALH	2979	107468	59766	9/26/2017	32.88	3426.87	Top of 1" sounding tube coupler
MALH	2979	107468	59766	11/29/2017	32.96	3426.79	Top of 1" sounding tube coupler
MALH	2979	107468	59766	3/7/2018	32.94	3426.81	Top of 1" sounding tube coupler
MALH	2979	107468	59766	6/26/2018	33.03	3426.72	Top of 1" sounding tube coupler
MALH	2979	107468	59766	9/26/2018	33.07	3426.68	Top of 1" sounding tube coupler
MALH	54197		59768	6/27/2014	16.05	3464.53	Top of 4" pipe, within surface casing
MALH	54197		59768	9/15/2014	17.1	3463.48	Top of 4" pipe, within surface casing
MALH	54197		59768	12/16/2014	17.29	3463.29	Top of 4" pipe, within surface casing
MALH	54197		59768	2/25/2015	16.31	3464.27	Top of 4" pipe, within surface casing
MALH	54197		59768	5/6/2015	15.27	3465.31	Top of 4" pipe, within surface casing
MALH	54197		59768	9/23/2015	17.25	3463.33	Top of 4" pipe, within surface casing
MALH	54197		59768	12/16/2015	17.44	3463.14	Top of 4" pipe, within surface casing
MALH	54197		59768	9/29/2016	17.03	3463.55	Top of 4" pipe, within surface casing
MALH	54197		59768	12/21/2016	17.18	3463.40	Top of 4" pipe, within surface casing
MALH	54197		59768	3/22/2017	13.86	3466.72	Top of 4" pipe, within surface casing
MALH	54197		59768	6/22/2017	10.69	3469.89	Top of 4" pipe, within surface casing
MALH	54197		59768	9/26/2017	15.91	3464.67	Top of 4" pipe, within surface casing
MALH	54197		59768	11/29/2017	16.09	3464.49	Top of 4" pipe, within surface casing
MALH	54197		59768	3/7/2018	15.94	3464.64	Top of 4" pipe, within surface casing
MALH	54197		59768	6/26/2018	16.79	3463.79	Top of 4" pipe, within surface casing
MALH	54197		59768	9/26/2018	17.12	3463.46	Top of 4" pipe, within surface casing
MALH	2983		59770	6/27/2014	140.66	3248.32	Top of 4" pipe, within surface casing
MALH	2983		59770	9/15/2014	140.68	3248.30	Top of 4" pipe, within surface casing
MALH	2983		59770	12/16/2014	140.69	3248.29	Top of 4" pipe, within surface casing
MALH	2983		59770	2/25/2015	140.76	3248.22	Top of 4" pipe, within surface casing
MALH	2983		59770	5/6/2015	140.82	3248.16	Top of 4" pipe, within surface casing
MALH	2983		59770	9/23/2015	140.86	3248.12	Top of 4" pipe, within surface casing
MALH	2983		59770	12/16/2015	140.84	3248.14	Top of 4" pipe, within surface casing
MALH	2983		59770	9/29/2016	141.04	3247.94	Top of 4" pipe, within surface casing
MALH	2983		59770	12/21/2016	141.12	3247.86	Top of 4" pipe, within surface casing
MALH	2983		59770	3/22/2017	140.89	3248.09	Top of 4" pipe, within surface casing

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	2983		59770	6/22/2017	140.91	3248.07	Top of 4" pipe, within surface casing
MALH	2983		59770	9/26/2017	140.99	3247.99	Top of 4" pipe, within surface casing
MALH	2983		59770	11/29/2017	141.23	3247.75	Top of 4" pipe, within surface casing
MALH	2983		59770	3/7/2018	141.40	3247.58	Top of 4" pipe, within surface casing
MALH	2983		59770	6/26/2018	141.21	3247.77	Top of 4" pipe, within surface casing
MALH	2983		59770	9/26/2018	141.27	3247.71	Top of 4" pipe, within surface casing
MALH	2984	109352	59772	3/18/2013	95.64	3672.52	Top of 1" sounding tube coupler
MALH	2984	109352	59772	6/18/2013	95.71	3672.45	Top of 1" sounding tube coupler
MALH	2984	109352	59772	8/8/2013	95.81	3672.35	Top of 1" sounding tube coupler
MALH	2984	109352	59772	11/24/2013	96.05	3672.11	Top of 1" sounding tube coupler
MALH	2984	109352	59772	3/24/2014	96.18	3671.98	Top of 1" sounding tube coupler
MALH	2984	109352	59772	6/25/2014	95.06	3673.10	Top of 1" sounding tube coupler
MALH	2984	109352	59772	9/11/2014	95.21	3672.95	Top of 1" sounding tube coupler
MALH	2984	109352	59772	12/16/2014	95.23	3672.93	Top of 1" sounding tube coupler
MALH	2984	109352	59772	2/25/2015	95.40	3672.76	Top of 1" sounding tube coupler
MALH	2984	109352	59772	5/6/2015	95.37	3672.79	Top of 1" sounding tube coupler
MALH	2984	109352	59772	9/23/2015	95.59	3672.57	Top of 1" sounding tube coupler
MALH	2984	109352	59772	12/16/2015	95.64	3672.52	Top of 1" sounding tube coupler
MALH	2984	109352	59772	9/29/2016	96.04	3672.12	Top of 1" sounding tube coupler
MALH	2984	109352	59772	12/21/2016	96.25	3671.91	Top of 1" sounding tube coupler
MALH	2984	109352	59772	3/22/2017	96.22	3671.94	Top of 1" sounding tube coupler
MALH	2984	109352	59772	6/22/2017	94.17	3673.99	Top of 1" sounding tube coupler
MALH	2984	109352	59772	9/26/2017	94.07	3674.09	Top of 1" sounding tube coupler
MALH	2984	109352	59772	11/29/2017	94.30	3673.86	Top of 1" sounding tube coupler
MALH	2984	109352	59772	3/7/2018	94.25	3673.91	Top of 1" sounding tube coupler
MALH	2984	109352	59772	6/26/2018	94.42	3673.74	Top of 1" sounding tube coupler
MALH	2984	109352	59772	9/26/2018	94.66	3673.50	Top of 1" sounding tube coupler
MALH	54071	109354	26-092-915	3/18/2013	76.79	3633.21	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	6/20/2013	76.95	3633.05	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	8/8/2013	77.03	3632.97	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	11/25/2013	77.34	3632.66	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	3/24/2014	77.64	3632.36	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	6/25/2014	77.65	3632.35	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	9/15/2014	77.91	3632.09	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	12/16/2014	78.10	3631.90	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	2/25/2015	78.33	3631.67	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	5/6/2015	78.45	3631.55	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	9/23/2015	78.78	3631.22	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	12/16/2015	78.94	3631.06	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	9/29/2016	79.34	3630.66	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	12/21/2016	79.50	3630.50	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	3/22/2017	78.68	3631.32	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	6/22/2017	77.35	3632.65	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	9/26/2017	76.84	3633.16	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	11/29/2017	77.02	3632.98	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	3/7/2018	76.48	3633.52	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	6/26/2018	76.41	3633.59	Top of 2" pipe, within surface casing
MALH	54071	109354	26-092-915	9/26/2018	76.45	3633.55	Top of 2" pipe, within surface casing
MALH	54195		57-1	9/15/2014	66.75	3703.89	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	12/16/2014	67.4	3703.24	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	2/25/2015	68.23	3702.41	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	5/6/2015	68.45	3702.19	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	9/23/2015	68.49	3702.15	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	12/16/2015	68.82	3701.82	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	9/29/2016	64.88	3705.76	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	12/21/2016	65.15	3705.49	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	3/22/2017	54.13	3716.51	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	6/22/2017	51.08	3719.56	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	9/26/2017	52.83	3717.81	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	11/29/2017	54.42	3716.22	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	3/7/2018	55.84	3714.80	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	6/26/2018	57.20	3713.44	Top of 1.25" pipe, within surface casing
MALH	54195		57-1	9/26/2018	71.54	3699.10	Top of 1.25" pipe, within surface casing
MALH	54196		57-10	9/15/2014	45.38	3635.76	Top of 1" pipe, within surface casing
MALH	54196		57-10	12/16/2014	45.33	3635.81	Top of 1" pipe, within surface casing
MALH	54196		57-10	2/25/2015	45.34	3635.80	Top of 1" pipe, within surface casing
MALH	54196		57-10	5/6/2015	45.31	3635.83	Top of 1" pipe, within surface casing
MALH	54196		57-10	9/23/2015	45.55	3635.59	Top of 1" pipe, within surface casing
MALH	54196		57-10	12/16/2015	45.34	3635.80	Top of 1" pipe, within surface casing
MALH	54196		57-10	9/29/2016	45.52	3635.62	Top of 1" pipe, within surface casing
MALH	54196		57-10	12/21/2016	45.64	3635.50	Top of 1" pipe, within surface casing
MALH	54196		57-10	3/22/2017	45.30	3635.84	Top of 1" pipe, within surface casing
MALH	54196		57-10	6/22/2017	45.33	3635.81	Top of 1" pipe, within surface casing
MALH	54196		57-10	9/26/2017	45.38	3635.76	Top of 1" pipe, within surface casing
MALH	54196		57-10	11/29/2017	45.56	3635.58	Top of 1" pipe, within surface casing
MALH	54196		57-10	3/7/2018	45.49	3635.65	Top of 1" pipe, within surface casing
MALH	54196		57-10	6/26/2018	45.14	3636.00	Top of 1" pipe, within surface casing

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	54196		57-10	9/26/2018	45.47	3635.67	Top of 1" pipe, within surface casing
MALH	54072	109360	89-2	3/18/2013	57.40	3236.10	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	6/20/2013	57.40	3236.10	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	8/8/2013	57.42	3236.08	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	11/25/2013	57.67	3235.83	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	3/24/2014	57.54	3235.96	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	6/27/2014	57.34	3236.16	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	9/15/2014	57.42	3236.08	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	12/16/2014	57.46	3236.04	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	2/25/2015	57.67	3235.83	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	5/6/2015	57.55	3235.95	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	9/23/2015	57.74	3235.76	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	12/16/2015	57.71	3235.79	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	9/29/2016	57.90	3235.60	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	12/21/2016	58.12	3235.38	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	3/22/2017	57.61	3235.89	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	6/22/2017	57.62	3235.88	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	9/26/2017	57.66	3235.84	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	11/29/2017	57.90	3235.60	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	3/7/2018	57.78	3235.72	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	6/26/2018	57.77	3235.73	Top of 2" pipe, within surface casing
MALH	54072	109360	89-2	9/26/2018	57.96	3235.54	Top of 2" pipe, within surface casing
MALH	54046		Bishop	3/26/2013	107.74	3283.77	top of steel 6" coupler
MALH	54046		Bishop	6/18/2013	107.83	3283.68	top of steel 6" coupler
MALH	54046		Bishop	8/7/2013	107.75	3283.76	top of steel 6" coupler
MALH	54046		Bishop	11/25/2013	108.51	3283.00	top of steel 6" coupler
MALH	54046		Bishop	3/24/2014	108.87	3282.64	top of steel 6" coupler
MALH	54046		Bishop	6/27/2014	107.79	3283.72	top of steel 6" coupler
MALH	54046		Bishop	9/15/2014	109.46	3282.05	top of steel 6" coupler
MALH	54046		Bishop	12/16/2014	107.87	3283.64	top of steel 6" coupler
MALH	54046		Bishop	2/25/2015	107.85	3283.66	top of steel 6" coupler
MALH	54046		Bishop	5/6/2015	107.83	3283.68	top of steel 6" coupler
MALH	54046		Bishop	9/23/2015	109.39	3282.12	top of steel 6" coupler
MALH	54046		Bishop	12/16/2015	108.09	3283.42	top of steel 6" coupler
MALH	54046		Bishop	9/29/2016	109.07	3282.44	top of steel 6" coupler
MALH	54046		Bishop	12/21/2016	108.34	3283.17	top of steel 6" coupler
MALH	54046		Bishop	3/22/2017	107.89	3283.62	top of steel 6" coupler
MALH	54046		Bishop	6/22/2017	107.94	3283.57	top of steel 6" coupler
MALH	54046		Bishop	9/26/2017	111.98	3279.53	top of steel 6" coupler
MALH	54046		Bishop	11/29/2017	108.59	3282.92	top of steel 6" coupler
MALH	54046		Bishop	3/7/2018	108.06	3283.45	top of steel 6" coupler
MALH	54046		Bishop	7/25/2018	108.55	3282.96	top of steel 6" coupler
MALH	54046		Bishop	9/26/2018	110.51	3281.00	top of steel 6" coupler
MALH	2277	109398	BLM	3/18/2013	156.55	3423.09	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	6/18/2013	156.31	3423.33	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	8/8/2013	156.44	3423.20	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	11/24/2013	156.60	3423.04	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	3/24/2014	156.49	3423.15	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	6/27/2014	156.17	3423.47	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	9/15/2014	156.28	3423.36	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	12/16/2014	156.04	3423.60	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	2/25/2015	156.24	3423.40	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	5/6/2015	156.02	3423.62	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	9/23/2015	155.97	3423.67	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	12/16/2015	155.95	3423.69	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	9/29/2016	155.71	3423.93	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	12/21/2016	156.05	3423.59	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	3/22/2017	155.54	3424.10	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	6/22/2017	155.76	3423.88	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	9/26/2017	155.77	3423.87	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	11/29/2017	155.92	3423.72	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	3/7/2018	155.61	3424.03	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	6/26/2018	155.57	3424.07	Top of 1" sounding tube coupler
MALH	2277	109398	BLM	9/26/2018	155.69	3423.95	Top of 1" sounding tube coupler
MALH	54404	125168	GMW17-31	9/26/2017	DRY	#VALUE!	Top of PVC casing
MALH	54404	125168	GMW17-31	11/29/2017	DRY	#VALUE!	Top of PVC casing
MALH	54404	125168	GMW17-31	3/7/2018	499.30	3222.71	Top of PVC casing
MALH	54404	125168	GMW17-31	6/26/2018	499.35	3222.66	Top of PVC casing
MALH	54404	125168	GMW17-31	9/26/2018	499.41	3222.60	Top of PVC casing
MALH	54405	125169	GMW17-32	11/29/2017	659.52	3042.57	Top of PVC casing
MALH	54405	125169	GMW17-32	3/7/2018	625.82	3076.27	Top of PVC casing
MALH	54405	125169	GMW17-32	6/26/2018	619.84	3082.25	Top of PVC casing
MALH	54405	125169	GMW17-32	9/26/2018	619.99	3082.10	Top of PVC casing
MALH	54406	125170	GMW17-33	11/29/2017	242.83	3461.37	Top of PVC casing
MALH	54406	125170	GMW17-33	3/7/2018	246.21	3457.99	Top of PVC casing
MALH	54406	125170	GMW17-33	6/26/2018	249.38	3454.82	Top of PVC casing
MALH	54406	125170	GMW17-33	9/26/2018	252.04	3452.16	Top of PVC casing

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	54437	130031	GMW17-34	6/26/2018	DRY	#VALUE!	Top of SS casing
MALH	54437	130031	GMW17-34	9/26/2018	DRY	#VALUE!	Top of SS casing
MALH	2281	107469	GW-1	3/14/2013	55.30	3653.80	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	6/17/2013	55.24	3653.86	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	8/6/2013	55.44	3653.66	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	11/21/2013	55.58	3653.52	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	3/18/2014	55.51	3653.59	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	6/25/2014	55.23	3653.87	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	9/11/2014	55.30	3653.80	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	12/16/2014	55.18	3653.92	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	2/25/2015	55.24	3653.86	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	5/6/2015	55.12	3653.98	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	9/23/2015	55.11	3653.99	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	12/16/2015	55.09	3654.01	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	9/29/2016	55.39	3653.71	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	12/21/2016	59.28	3649.82	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	3/22/2017	57.00	3652.10	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	6/22/2017	56.02	3653.08	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	9/26/2017	55.42	3653.68	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	11/29/2017	55.44	3653.66	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	3/7/2018	55.03	3654.07	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	6/26/2018	54.91	3654.19	Top of 1" sounding tube coupler
MALH	2281	107469	GW-1	9/26/2018	54.92	3654.18	Top of 1" sounding tube coupler
MALH	2279	109357	GW-2	3/18/2013	164.44	3663.02	Top of cap on 4" pipe
MALH	2279	109357	GW-2	6/20/2013	164.61	3662.85	Top of cap on 4" pipe
MALH	2279	109357	GW-2	8/7/2013	164.61	3662.85	Top of cap on 4" pipe
MALH	2279	109357	GW-2	11/21/2013	164.56	3662.90	Top of cap on 4" pipe
MALH	2279	109357	GW-2	3/24/2014	164.57	3662.89	Top of cap on 4" pipe
MALH	2279	109357	GW-2	6/27/2014	164.52	3662.94	Top of cap on 4" pipe
MALH	2279	109357	GW-2	9/11/2014	164.60	3662.86	Top of cap on 4" pipe
MALH	2279	109357	GW-2	12/16/2014	164.45	3663.01	Top of cap on 4" pipe
MALH	2279	109357	GW-2	2/25/2015	164.42	3663.04	Top of cap on 4" pipe
MALH	2279	109357	GW-2	5/6/2015	164.42	3663.04	Top of cap on 4" pipe
MALH	2279	109357	GW-2	9/23/2015	164.56	3662.90	Top of cap on 4" pipe
MALH	2279	109357	GW-2	12/16/2015	164.41	3663.05	Top of cap on 4" pipe
MALH	2279	109357	GW-2	9/29/2016	164.54	3662.92	Top of cap on 4" pipe
MALH	2279	109357	GW-2	12/21/2016	164.61	3662.85	Top of cap on 4" pipe
MALH	2279	109357	GW-2	3/22/2017	164.07	3663.39	Top of cap on 4" pipe
MALH	2279	109357	GW-2	6/22/2017	164.26	3663.20	Top of cap on 4" pipe
MALH	2279	109357	GW-2	9/26/2017	164.43	3663.03	Top of cap on 4" pipe
MALH	2279	109357	GW-2	11/29/2017	164.51	3662.95	Top of cap on 4" pipe
MALH	2279	109357	GW-2	3/7/2018	164.41	3663.05	Top of cap on 4" pipe
MALH	2279	109357	GW-2	6/26/2018	164.50	3662.96	Top of cap on 4" pipe
MALH	2279	109357	GW-2	9/26/2018	164.55	3662.91	Top of cap on 4" pipe
MALH	2278	107467	GW-3	3/18/2013	227.47	3406.12	Top of surface casing
MALH	2278	107467	GW-3	6/20/2013	227.34	3406.25	Top of surface casing
MALH	2278	107467	GW-3	8/8/2013	227.33	3406.26	Top of surface casing
MALH	2278	107467	GW-3	11/25/2013	227.40	3406.19	Top of surface casing
MALH	2278	107467	GW-3	3/24/2014	227.27	3406.32	Top of surface casing
MALH	2278	107467	GW-3	6/25/2014	227.07	3406.52	Top of surface casing
MALH	2278	107467	GW-3	9/15/2014	227.14	3406.45	Top of surface casing
MALH	2278	107467	GW-3	12/16/2014	227.02	3406.57	Top of surface casing
MALH	2278	107467	GW-3	2/25/2015	227.01	3406.58	Top of surface casing
MALH	2278	107467	GW-3	5/6/2015	226.96	3406.63	Top of surface casing
MALH	2278	107467	GW-3	9/23/2015	227.07	3406.52	Top of surface casing
MALH	2278	107467	GW-3	12/16/2015	227.03	3406.56	Top of surface casing
MALH	2278	107467	GW-3	9/29/2016	227.01	3406.58	Top of surface casing
MALH	2278	107467	GW-3	12/21/2016	227.12	3406.47	Top of surface casing
MALH	2278	107467	GW-3	3/22/2017	226.73	3406.86	Top of surface casing
MALH	2278	107467	GW-3	6/22/2017	226.98	3406.61	Top of surface casing
MALH	2278	107467	GW-3	9/26/2017	227.07	3406.52	Top of surface casing
MALH	2278	107467	GW-3	11/29/2017	227.85	3405.74	Top of surface casing
MALH	2278	107467	GW-3	3/7/2018	228.55	3405.04	Top of surface casing
MALH	2278	107467	GW-3	6/26/2018	229.57	3404.02	Top of surface casing
MALH	2278	107467	GW-3	9/26/2018	231.91	3401.68	Top of surface casing
MALH	54073	107460	GW-4	3/14/2013	82.87	3259.84	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	6/17/2013	82.78	3259.93	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	8/6/2013	82.30	3260.41	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	11/21/2013	82.36	3260.35	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	3/18/2014	82.25	3260.46	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	6/27/2014	82.07	3260.64	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	9/11/2014	82.24	3260.47	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	12/16/2014	82.02	3260.69	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	2/25/2015	82.15	3260.56	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	5/6/2015	82.04	3260.67	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	9/23/2015	82.12	3260.59	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	12/16/2015	81.99	3260.72	Top of 1" sounding tube coupler

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	54073	107460	GW-4	9/29/2016	81.98	3260.73	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	12/21/2016	82.19	3260.52	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	3/22/2017	81.96	3260.75	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	6/22/2017	82.02	3260.69	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	9/26/2017	82.05	3260.66	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	11/29/2017	82.07	3260.64	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	3/7/2018	82.03	3260.68	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	6/26/2018	81.91	3260.80	Top of 1" sounding tube coupler
MALH	54073	107460	GW-4	9/26/2018	81.86	3260.85	Top of 1" sounding tube coupler
MALH	54194		GW-5	9/15/2014	191.78	3221.20	Top of 2" pipe, within surface casing
MALH	54194		GW-5	12/16/2014	191.83	3221.15	Top of 2" pipe, within surface casing
MALH	54194		GW-5	2/25/2015	191.91	3221.07	Top of 2" pipe, within surface casing
MALH	54194		GW-5	5/6/2015	191.84	3221.14	Top of 2" pipe, within surface casing
MALH	54194		GW-5	9/23/2015	191.82	3221.16	Top of 2" pipe, within surface casing
MALH	54194		GW-5	12/16/2015	191.85	3221.13	Top of 2" pipe, within surface casing
MALH	54194		GW-5	9/29/2016	191.59	3221.39	Top of 2" pipe, within surface casing
MALH	54194		GW-5	12/21/2016	191.82	3221.16	Top of 2" pipe, within surface casing
MALH	54194		GW-5	3/22/2017	191.51	3221.47	Top of 2" pipe, within surface casing
MALH	54194		GW-5	6/22/2017	191.58	3221.40	Top of 2" pipe, within surface casing
MALH	54194		GW-5	9/26/2017	191.59	3221.39	Top of 2" pipe, within surface casing
MALH	54194		GW-5	11/29/2017	191.87	3221.11	Top of 2" pipe, within surface casing
MALH	54194		GW-5	3/7/2018	191.68	3221.30	Top of 2" pipe, within surface casing
MALH	54194		GW-5	6/26/2018	191.46	3221.52	Top of 2" pipe, within surface casing
MALH	54194		GW-5	9/26/2018	191.53	3221.45	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	3/18/2013	140.73	3236.60	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	6/20/2013	140.84	3236.49	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	8/8/2013	140.81	3236.52	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	11/25/2013	141.03	3236.30	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	3/24/2014	140.89	3236.44	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	6/27/2014	140.67	3236.66	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	9/15/2014	140.74	3236.59	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	12/16/2014	140.74	3236.59	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	2/25/2015	140.96	3236.37	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	5/6/2015	140.86	3236.47	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	9/23/2015	141.00	3236.33	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	12/16/2015	140.98	3236.35	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	9/29/2016	141.23	3236.10	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	12/21/2016	141.48	3235.85	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	3/22/2017	141.03	3236.30	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	6/22/2017	141.00	3236.33	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	9/26/2017	141.01	3236.32	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	11/29/2017	141.12	3236.21	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	3/7/2018	141.01	3236.32	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	6/26/2018	141.06	3236.27	Top of 2" pipe, within surface casing
MALH	2578	109368	GW-6	9/26/2018	141.17	3236.16	Top of 2" pipe, within surface casing
MALH	2275	107457	PROD-1	3/17/2013		3436.41	
MALH	2275	107457	PROD-1	6/20/2013		3436.41	
MALH	2275	107457	PROD-1	8/13/2013		3436.41	
MALH	2275	107457	PROD-1	11/22/2013		3436.41	
MALH	2275	107457	PROD-1	3/16/2014		3436.41	
MALH	2275	107457	PROD-1	6/24/2014		3436.41	
MALH	2275	107457	PROD-1	9/16/2014		3436.41	
MALH	2275	107457	PROD-1	12/10/2014		3436.41	
MALH	2275	107457	PROD-1	3/18/2015		3436.41	
MALH	2275	107457	PROD-1	5/7/2015		3436.41	
MALH	2275	107457	PROD-1	9/23/2015		3436.41	
MALH	2275	107457	PROD-1	12/16/2015		3436.41	
MALH	2275	107457	PROD-1	9/29/2016		3436.41	
MALH	2275	107457	PROD-1	12/21/2016		3436.41	
MALH	2275	107457	PROD-1	3/22/2017			
MALH	2275	107457	PROD-1	6/22/2017			
MALH	2275	107457	PROD-1	9/26/2017			
MALH	2275	107457	PROD-1	11/29/2017			
MALH	2275	107457	PROD-1	3/7/2018		3436.41	
MALH	2275	107457	PROD-1	6/26/2018		3436.41	
MALH	2275	107457	PROD-1	9/26/2018		3436.41	
MALH	2276	109353	PW-1	3/26/2013	56.73	3652.37	Top of well cap
MALH	2276	109353	PW-1	6/17/2013	57.14	3651.96	Top of well cap
MALH	2276	109353	PW-1	8/6/2013	57.15	3651.95	Top of well cap
MALH	2276	109353	PW-1	11/21/2013	56.96	3652.14	Top of well cap
MALH	2276	109353	PW-1	3/18/2014	56.87	3652.23	Top of well cap
MALH	2276	109353	PW-1	6/25/2014	56.60	3652.50	Top of well cap
MALH	2276	109353	PW-1	9/11/2014	56.73	3652.37	Top of well cap
MALH	2276	109353	PW-1	12/16/2014	56.51	3652.59	Top of well cap
MALH	2276	109353	PW-1	2/25/2015	56.43	3652.67	Top of well cap
MALH	2276	109353	PW-1	5/6/2015	56.25	3652.85	Top of well cap
MALH	2276	109353	PW-1	9/23/2015	56.08	3653.02	Top of well cap

Log County	Log Nbr	Well Tag No.	Well Name	Date	Water Level (ft, BMP)	Water Level (ft, ASL)	MP Description
MALH	2276	109353	PW-1	12/16/2015	55.85	3653.25	Top of well cap
MALH	2276	109353	PW-1	9/29/2016	56.32	3652.78	Top of well cap
MALH	2276	109353	PW-1	12/21/2016	63.12	3645.98	Top of well cap
MALH	2276	109353	PW-1	3/22/2017	59.05	3650.05	Top of well cap
MALH	2276	109353	PW-1	6/22/2017	57.24	3651.86	Top of well cap
MALH	2276	109353	PW-1	9/26/2017	56.54	3652.56	Top of well cap
MALH	2276	109353	PW-1	11/29/2017	56.39	3652.71	Top of well cap
MALH	2276	109353	PW-1	3/7/2018	54.55	3654.55	Top of coupler on top of well seal
MALH	2276	109353	PW-1	6/26/2018	54.42	3654.68	Top of coupler on top of well seal
MALH	2276	109353	PW-1	9/26/2018	54.44	3654.66	Top of coupler on top of well seal
MALH	2206	109351	PW-4	3/14/2013	80.52	3260.88	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	6/17/2013	80.49	3260.91	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	8/6/2013	80.49	3260.91	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	11/21/2013	80.60	3260.80	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	3/18/2014	80.47	3260.93	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	6/25/2014	80.43	3260.97	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	9/11/2014	80.55	3260.85	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	12/16/2014	80.35	3261.05	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	2/25/2015	80.41	3260.99	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	5/6/2015	80.25	3261.15	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	9/23/2015	80.35	3261.05	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	12/16/2015	80.33	3261.07	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	9/29/2016	79.99	3261.41	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	12/21/2016	80.25	3261.15	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	3/22/2017	80.08	3261.32	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	6/22/2017	80.10	3261.30	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	9/26/2017	80.02	3261.38	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	11/29/2017	80.20	3261.20	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	3/7/2018	80.03	3261.37	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	6/26/2018	79.67	3261.73	Top of 1" sounding tube coupler
MALH	2206	109351	PW-4	9/26/2018	80.01	3261.39	Top of 1" sounding tube coupler

Table F6. Spring and Flowing Well Flow Measurements

Spring Name	Type	Sampling Period	Sample Frequency	Date	Parameter	Result	Result_for plot	Units	Comments
Bull Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	0.69		GPM	
Bull Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	0.69		GPM	
Bull Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	0.73		GPM	
Bull Spring	Spring	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	0.47		GPM	
Bull Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	0.76		GPM	
Bull Spring	Spring	Q4-2015	SemiAnnual	12/16/2015	Flow Rate	0.9		GPM	
Central Grassy Mountain Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	ND		GPM	Water emanating from ground. Unable to measure.
Central Grassy Mountain Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	ND		GPM	Water emanating from ground. Unable to measure.
Central Grassy Mountain Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	ND		GPM	Ground dry. No measurement.
Darky Rock Well	Flowing Well	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	11.32		GPM	
Darky Rock Well	Flowing Well	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	11.32		GPM	
Darky Rock Well	Flowing Well	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	8.34		GPM	
Darky Rock Well	Flowing Well	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	10.6		GPM	
Darky Rock Well	Flowing Well	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	10.5		GPM	
Darky Rock Well	Flowing Well	Q4-2015	SemiAnnual	12/16/2015	Flow Rate	11		GPM	
Deposit Stock Tank	Spring	Q1-2013	Quarterly	3/17/2013	Flow Rate	0.38		GPM	
Deposit Stock Tank	Spring	Q2-2013	Quarterly	6/20/2013	Flow Rate	0.17		GPM	
Deposit Stock Tank	Spring	Q3-2013	Quarterly	8/13/2013	Flow Rate	0.12		GPM	
Deposit Stock Tank	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	0.25		GPM	
Deposit Stock Tank	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	0.56		GPM	
Deposit Stock Tank	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	0.14		GPM	
Deposit Stock Tank	Spring	Q3-2014	Quarterly	9/17/2014	Flow Rate	0.11		GPM	
Deposit Stock Tank	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.26		GPM	
Deposit Stock Tank	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.41		GPM	
Deposit Stock Tank	Spring	Q2-2015	Quarterly	5/7/2015	Flow Rate	0.29		GPM	
Deposit Stock Tank	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	ND		GPM	Inlet pipe removed. Water ponding on ground. Unable to measure.
Deposit Stock Tank	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	ND		GPM	Inlet pipe removed. Water ponding on ground. Unable to measure.
Deposit Stock Tank	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.18		GPM	New inlet pipe installed.
Deposit Stock Tank	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	ND		GPM	Inlet frozen over. Unable to measure.
Deposit Stock Tank	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	0.58		GPM	
Deposit Stock Tank	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.26		GPM	
Deposit Stock Tank	Spring	Q3-2017	Quarterly	9/25/2017	Flow Rate	0.2		GPM	
Deposit Stock Tank	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.29		GPM	
Deposit Stock Tank	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.4		GPM	
Deposit Stock Tank	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.14		GPM	
Deposit Stock Tank	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.17		GPM	
East Grassy Mountain Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	ND		GPM	Water seeping from ground. Unable to measure.
East Grassy Mountain Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	ND		GPM	Water seeping from ground. Unable to measure.
East Grassy Mountain Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	ND		GPM	Water seeping from ground. Unable to measure.
Flowing Well	Flowing Well	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	3.11		GPM	
Flowing Well	Flowing Well	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	3.11		GPM	
Flowing Well	Flowing Well	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	4.95		GPM	
Flowing Well	Flowing Well	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	5.2		GPM	
Flowing Well	Flowing Well	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	5.2		GPM	
Flowing Well	Flowing Well	Q4-2015	SemiAnnual	12/16/2015	Flow Rate	3.6		GPM	
Government Corral Spring	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	1.51		GPM	
Government Corral Spring	Spring	Q2-2013	Quarterly	6/20/2013	Flow Rate	1.44		GPM	
Government Corral Spring	Spring	Q3-2013	Quarterly	8/7/2013	Flow Rate	1.35		GPM	
Government Corral Spring	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	1.55		GPM	
Government Corral Spring	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	1.67		GPM	
Government Corral Spring	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	2.14		GPM	
Government Corral Spring	Spring	Q3-2014	Quarterly	9/17/2014	Flow Rate	1.93		GPM	
Government Corral Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.63		GPM	
Government Corral Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.64		GPM	
Government Corral Spring	Spring	Q2-2015	Quarterly	5/7/2015	Flow Rate	0.76		GPM	
Government Corral Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	0.87		GPM	
Government Corral Spring	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	0.9		GPM	
Government Corral Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	1.2		GPM	
Government Corral Spring	Spring	Q4-2016	Quarterly	12/22/2016	Flow Rate	0.85		GPM	
Government Corral Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	0.38		GPM	
Government Corral Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.56		GPM	
Government Corral Spring	Spring	Q3-2017	Quarterly	9/25/2017	Flow Rate	1.18		GPM	
Government Corral Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	1.09		GPM	
Government Corral Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	1.08		GPM	
Government Corral Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	1.66		GPM	
Government Corral Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.55		GPM	
Government Corral Spring	Spring	Q4-2018	Quarterly	9/27/2018	Flow Rate	2.55		GPM	
Grassy Spring	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	0		GPM	No flow from inlet pipe.
Grassy Spring	Spring	Q2-2013	Quarterly	6/27/2013	Flow Rate	0.005		GPM	Minimal flow. >1/4 cup per minute.
Grassy Spring	Spring	Q3-2013	Quarterly	8/7/2013	Flow Rate	0.014		GPM	Drip flow.
Grassy Spring	Spring	Q4-2013	Quarterly	11/18/2013	Flow Rate	0.016		GPM	Drip flow.
Grassy Spring	Spring	Q1-2014	Quarterly	3/17/2014	Flow Rate	0.016		GPM	Drip flow.
Grassy Spring	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	0.01		GPM	Drip flow.
Grassy Spring	Spring	Q3-2014	Quarterly	9/17/2014	Flow Rate	0.007		GPM	Drip flow.
Grassy Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.02		GPM	Drip flow.
Grassy Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.03		GPM	Drip flow.
Grassy Spring	Spring	Q2-2015	Quarterly	5/7/2015	Flow Rate	0.01		GPM	Drip flow.
Grassy Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	0		GPM	No flow from cracked HDPE inlet pipe.
Grassy Spring	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	0.01		GPM	Drip flow.
Grassy Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.01		GPM	Drip flow.
Grassy Spring	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	0		GPM	No flow from inlet pipe. May be frozen.
Grassy Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	0.04		GPM	Drip flow.
Grassy Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.04		GPM	Drip flow.
Grassy Spring	Spring	Q3-2017	Quarterly	9/25/2017	Flow Rate	0.04		GPM	Drip flow.
Grassy Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.03		GPM	Drip flow.
Grassy Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.03		GPM	Drip flow.
Grassy Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.02		GPM	Drip flow.
Grassy Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.02		GPM	Drip flow.
Lowe Spring	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	0.03		GPM	Drip flow.
Lowe Spring	Spring	Q2-2013	Quarterly	6/26/2013	Flow Rate	0.02		GPM	Drip flow.
Lowe Spring	Spring	Q3-2013	Quarterly	8/13/2013	Flow Rate	0.012		GPM	Drip flow.
Lowe Spring	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	0.023		GPM	Drip flow.
Lowe Spring	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	0.026		GPM	Drip flow.
Lowe Spring	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	0.003		GPM	Drip flow.
Lowe Spring	Spring	Q3-2014	Quarterly	9/17/2014	Flow Rate	0.001		GPM	Drip flow.
Lowe Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0		GPM	HDPE line broken at cutbank. No visible flow.
Lowe Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	ND		GPM	Pipe discharges directly into ground. Unable to measure.
Lowe Spring	Spring	Q2-2015	Quarterly	5/7/2015	Flow Rate	0		GPM	Pipe snapped at cutbank. No visible flow.

Lowe Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	ND		GPM	Broken pipe frozen into ground. Unable to measure.
Lowe Spring	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	ND		GPM	Broken pipe frozen into ground. Unable to measure.
Lowe Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	ND		GPM	Broken pipe stuck under mud. Unable to measure.
Lowe Spring	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	ND		GPM	Pipe buried in snow and frozen in ground. Unable to measure.
Lowe Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	ND		GPM	Pipe end buried in mud. Unable to measure.
Lowe Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.41		GPM	
Lowe Spring	Spring	Q3-2017	Quarterly	9/25/2017	Flow Rate	0.41		GPM	
Lowe Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.44		GPM	
Lowe Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.19		GPM	
Lowe Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.09		GPM	Drip flow.
Lowe Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.06		GPM	Drip flow.
Negro Rock Canyon Spring	Spring	Q2-2013	SemiAnnual	6/26/2013	Flow Rate	5 to 10		GPM	Visual estimate of flow in channel downstream from spring source.
Negro Rock Canyon Spring	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	5 to 10		GPM	Visual estimate of flow in channel downstream from spring source.
Negro Rock Canyon Spring	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Water emanating from ground at very low velocity. Unable to measure.
Negro Rock Canyon Spring	Spring	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	ND		GPM	Water emanating from ground at very low velocity. Unable to measure.
Negro Rock Canyon Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	ND		GPM	Water emanating from ground at very low velocity. Unable to measure.
Negro Rock Canyon Spring	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	ND		GPM	Water emanating from ground at very low velocity. Unable to measure.
Negro Rock Spring	Spring	Q2-2013	SemiAnnual	6/26/2013	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Negro Rock Spring	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Negro Rock Spring	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Negro Rock Spring	Spring	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Negro Rock Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Negro Rock Spring	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	ND		GPM	Inlet below surface of tire tank.
Oxbow Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	0.30		GPM	
Oxbow Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	0.30		GPM	
Oxbow Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	0.27		GPM	
Oxbow Spring	Spring	Q4-2014	SemiAnnual	12/18/2014	Flow Rate	0.27		GPM	
Oxbow Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	0.27		GPM	
Oxbow Spring	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	0.3		GPM	
Oxyoke Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	0		GPM	No flow at inlet.
Oxyoke Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	0		GPM	No flow at inlet.
Oxyoke Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	0		GPM	No flow at inlet.
Oxyoke Spring	Spring	Q4-2014	SemiAnnual	12/18/2014	Flow Rate	0		GPM	No flow at inlet.
Oxyoke Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	0		GPM	No flow at inlet.
Oxyoke Spring	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	0		GPM	No flow at inlet.
Poison Spring	Spring	Q1-2013	Quarterly	3/26/2013	Flow Rate	ND		GPM	Unable to measure.
Poison Spring	Spring	Q2-2013	Quarterly	6/26/2013	Flow Rate	0.99	0.99	GPM	
Poison Spring	Spring	Q3-2013	Quarterly	8/13/2013	Flow Rate	ND		GPM	No gap between concrete box crack and surrounding water surface.
Poison Spring	Spring	Q4-2013	Quarterly	11/21/2013	Flow Rate	1.06	1	GPM	
Poison Spring	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	1.00	1.00	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	1.00	1.00	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	1.00	1	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	1.00	1	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	1.00	1	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	1.00	1	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	1.00	1	GPM	Visual estimate of flow from crack in concrete.
Poison Spring	Spring	Q4-2015	Quarterly	12/15/2015	Flow Rate	1.4	1.4	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	1.9	1.9	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q4-2016	Quarterly	12/23/2016	Flow Rate	ND		GPM	Water flowing over both ends of concrete box. Unable to capture flow.
Poison Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	ND		GPM	Water flowing over both ends of concrete box. Unable to capture flow.
Poison Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	ND		GPM	Water flowing out of crack in concrete below water line. Unable to measure.
Poison Spring	Spring	Q3-2017	Quarterly	9/25/2017	Flow Rate	3.42	3.42	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	1.73	1.73	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	1.77	1.77	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	2.43	2.43	GPM	Difficult to measure. Flow is an approximation.
Poison Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.70	1.70	GPM	Difficult to measure. Flow is an approximation.
Prod-1	Flowing Well	Q1-2013	Quarterly	3/17/2013	Flow Rate	1.40		GPM	
Prod-1	Flowing Well	Q2-2013	Quarterly	6/20/2013	Flow Rate	1.30		GPM	
Prod-1	Flowing Well	Q3-2013	Quarterly	8/13/2013	Flow Rate	1.32		GPM	
Prod-1	Flowing Well	Q4-2013	Quarterly	11/22/2013	Flow Rate	1.31		GPM	
Prod-1	Flowing Well	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.88		GPM	
Prod-1	Flowing Well	Q4-2016	Quarterly	12/21/2016	Flow Rate	0		GPM	No flowing water.
Prod-1	Flowing Well	Q1-2017	Quarterly	3/22/2017	Flow Rate	0		GPM	No flowing water.
Prod-1	Flowing Well	Q2-2017	Quarterly	6/22/2017	Flow Rate	0		GPM	No flowing water.
Prod-1	Flowing Well	Q3-2017	Quarterly	9/26/2017	Flow Rate	0		GPM	No flowing water.
Prod-1	Flowing Well	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.34		GPM	Flow from upper discharge pipe.
Prod-1	Flowing Well	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.87		GPM	Flow from upper discharge pipe.
Prod-1	Flowing Well	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.85		GPM	
Prod-1	Flowing Well	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.08		GPM	
Red Tank No. 3	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Red Tank No. 3	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Red Tank No. 3	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	0.2		GPM	
Red Tank No. 3	Spring	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Red Tank No. 3	Spring	Q2-2015	SemiAnnual	5/7/2015	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Red Tank No. 3	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Sagebrush Spring	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	0.67		GPM	
Sagebrush Spring	Spring	Q2-2013	Quarterly	6/20/2013	Flow Rate	0.48		GPM	
Sagebrush Spring	Spring	Q3-2013	Quarterly	8/13/2013	Flow Rate	0.44		GPM	
Sagebrush Spring	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	0.46		GPM	
Sagebrush Spring	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	0.86		GPM	
Sagebrush Spring	Spring	Q2-2014	Quarterly	6/24/2014	Flow Rate	1.17		GPM	
Sagebrush Spring	Spring	Q3-2014	Quarterly	9/17/2014	Flow Rate	0.67		GPM	
Sagebrush Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0		GPM	No flow at upper tank inlet.
Sagebrush Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0		GPM	No flow at upper tank inlet.
Sagebrush Spring	Spring	Q2-2015	Quarterly	5/7/2015	Flow Rate	0		GPM	No flow at upper tank inlet.
Sagebrush Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	1.4		GPM	
Sagebrush Spring	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	1.6		GPM	
Sagebrush Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	1.7		GPM	
Sagebrush Spring	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	ND		GPM	Inlet pipe submerged and frozen over. Unable to measure.
Sagebrush Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	ND		GPM	Inlet pipe submerged. Unable to measure.
Sagebrush Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	ND		GPM	Inlet pipe submerged.
Sagebrush Spring	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	ND		GPM	No gap between inlet and water surface.
Sagebrush Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	1.62		GPM	
Sagebrush Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	ND		GPM	Inlet submerged.
Sagebrush Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	1.39		GPM	
Sagebrush Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.31		GPM	
Sourdough Spring Lower	Spring	Q1-2013	Quarterly	3/17/2013	Flow Rate	ND		GPM	Spring not identified prior to sampling event.
Sourdough Spring Lower	Spring	Q2-2013	Quarterly	6/27/2013	Flow Rate	0.10		GPM	
Sourdough Spring Lower	Spring	Q3-2013	Quarterly	8/14/2013	Flow Rate	0.066		GPM	
Sourdough Spring Lower	Spring	Q4-2013	Quarterly	11/23/2013	Flow Rate	0.08		GPM	
Sourdough Spring Lower	Spring	Q1-2014	Quarterly	3/17/2014	Flow Rate	0.14		GPM	
Sourdough Spring Lower	Spring	Q2-2014	Quarterly	6/23/2014	Flow Rate	0.05		GPM	
Sourdough Spring Lower	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	0.027		GPM	

Sourdough Spring Lower	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.03		GPM	
Sourdough Spring Lower	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.04		GPM	
Sourdough Spring Lower	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	0.04		GPM	
Sourdough Spring Lower	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	0.02		GPM	
Sourdough Spring Lower	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	ND		GPM	Tank and pipe frozen over. Unable to measure.
Sourdough Spring Lower	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.02		GPM	
Sourdough Spring Lower	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	0		GPM	No flow from inlet pipe. May be frozen.
Sourdough Spring Lower	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	0.01		GPM	Drip flow.
Sourdough Spring Lower	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.01		GPM	Drip flow.
Sourdough Spring Lower	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	0		GPM	Minimal flow. >10 minutes to fill 100 mL.
Sourdough Spring Lower	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	ND		GPM	Inlet pipe frozen. Unable to measure.
Sourdough Spring Lower	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0		GPM	No flow from inlet pipe.
Sourdough Spring Lower	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.00		GPM	No flow from inlet pipe.
Sourdough Spring Lower	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.00		GPM	Minimal flow. >10 minutes to fill 100 mL.
Sourdough Spring Upper	Spring	Q1-2013	Quarterly	3/17/2013	Flow Rate	0.22		GPM	
Sourdough Spring Upper	Spring	Q2-2013	Quarterly	6/27/2013	Flow Rate	0.10		GPM	
Sourdough Spring Upper	Spring	Q3-2013	Quarterly	8/14/2013	Flow Rate	0.032		GPM	
Sourdough Spring Upper	Spring	Q4-2013	Quarterly	11/23/2013	Flow Rate	0.10		GPM	
Sourdough Spring Upper	Spring	Q1-2014	Quarterly	3/17/2014	Flow Rate	0.10		GPM	
Sourdough Spring Upper	Spring	Q2-2014	Quarterly	6/23/2014	Flow Rate	0.09		GPM	
Sourdough Spring Upper	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	0.095		GPM	
Sourdough Spring Upper	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.16		GPM	
Sourdough Spring Upper	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.34		GPM	
Sourdough Spring Upper	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	0.31		GPM	
Sourdough Spring Upper	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	0.19		GPM	
Sourdough Spring Upper	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	0.34		GPM	
Sourdough Spring Upper	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.24		GPM	
Sourdough Spring Upper	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	0.42		GPM	
Sourdough Spring Upper	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	2.30		GPM	
Sourdough Spring Upper	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.99		GPM	
Sourdough Spring Upper	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	0.55		GPM	
Sourdough Spring Upper	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.63		GPM	
Sourdough Spring Upper	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.65		GPM	
Sourdough Spring Upper	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.42		GPM	
Sourdough Spring Upper	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.27		GPM	
Spring in Section 13 T22S R44E	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	0.83		GPM	
Spring in Section 13 T22S R44E	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	0.83		GPM	
Spring in Section 13 T22S R44E	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	1.02		GPM	
Spring in Section 13 T22S R44E	Spring	Q4-2014	SemiAnnual	12/18/2014	Flow Rate	0.62		GPM	
Spring in Section 13 T22S R44E	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	1.4		GPM	
Spring in Section 13 T22S R44E	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	0.78		GPM	
Spring in Section 23 T21S R43E	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure.
Spring in Section 23 T21S R43E	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure.
Spring in Section 23 T21S R43E	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure.
Spring North of Lowe Reservoir	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Spring North of Lowe Reservoir	Spring	Q4-2013	SemiAnnual	11/23/2013	Flow Rate	ND		GPM	Inlet submerged. Unable to measure.
Spring North of Lowe Reservoir	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	0		GPM	No visible flow.
Spring North of Lowe Reservoir	Spring	Q4-2014	SemiAnnual	12/18/2014	Flow Rate	0		GPM	No visible flow. Tank surrounded by standing water.
Spring North of Lowe Reservoir	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	0.01		GPM	Water dripping down inlet pipe. Very low flow.
Spring North of Lowe Reservoir	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	0		GPM	No visible flow.
Spring South of Poison Spring	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Spring South of Poison Spring	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Spring South of Poison Spring	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Spring South of Poison Spring	Spring	Q4-2014	SemiAnnual	12/10/2014	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Spring South of Poison Spring	Spring	Q2-2015	SemiAnnual	5/6/2015	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Spring South of Poison Spring	Spring	Q4-2015	SemiAnnual	12/15/2015	Flow Rate	ND		GPM	Water emanates from hillside under pond. Unable to measure.
Tank East of Negro Rock	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	9.91		GPM	
Tank East of Negro Rock	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	9.90		GPM	
Tank East of Negro Rock	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	6.89		GPM	
Tank East of Negro Rock	Spring	Q4-2015	--	12/15/2015	Flow Rate	3.6		GPM	
Tank East of Negro Rock	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	9.9		GPM	
Tank East of Negro Rock	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	9.14		GPM	
Tank East of Negro Rock	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	9.19		GPM	
Tank East of Negro Rock	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	5.14		GPM	
Tank East of Negro Rock	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	6.39		GPM	
Tank East of Negro Rock	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	5.13		GPM	
Tank East of Negro Rock	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	5.39		GPM	
Tank East of Negro Rock	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	9.12		GPM	
Tank East of Negro Rock	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.04		GPM	
Twin Springs North	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	1.76		GPM	
Twin Springs North	Spring	Q2-2013	Quarterly	6/20/2013	Flow Rate	1.57		GPM	
Twin Springs North	Spring	Q3-2013	Quarterly	8/14/2013	Flow Rate	1.45		GPM	
Twin Springs North	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	1.51		GPM	
Twin Springs North	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	1.44		GPM	
Twin Springs North	Spring	Q2-2014	Quarterly	6/23/2014	Flow Rate	1.42		GPM	
Twin Springs North	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	2.69		GPM	
Twin Springs North	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	3.3		GPM	
Twin Springs North	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	2.99		GPM	
Twin Springs North	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	2.8		GPM	
Twin Springs North	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	1.1		GPM	
Twin Springs North	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	2		GPM	
Twin Springs North	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	1.2		GPM	
Twin Springs North	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	1.54		GPM	
Twin Springs North	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	1.76		GPM	
Twin Springs North	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	1.72		GPM	
Twin Springs North	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	1.54		GPM	
Twin Springs North	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	1.41		GPM	
Twin Springs North	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	1.5		GPM	
Twin Springs North	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	1.47		GPM	
Twin Springs North	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	1.46		GPM	
Twin Springs South	Spring	Q1-2013	Quarterly	3/13/2013	Flow Rate	6.25		GPM	
Twin Springs South	Spring	Q2-2013	Quarterly	6/20/2013	Flow Rate	6.08		GPM	
Twin Springs South	Spring	Q3-2013	Quarterly	8/14/2013	Flow Rate	5.80		GPM	
Twin Springs South	Spring	Q4-2013	Quarterly	11/22/2013	Flow Rate	6.34		GPM	
Twin Springs South	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	5.81		GPM	
Twin Springs South	Spring	Q2-2014	Quarterly	6/23/2014	Flow Rate	5.49		GPM	
Twin Springs South	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	3.45		GPM	
Twin Springs South	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	3		GPM	
Twin Springs South	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	3.96		GPM	
Twin Springs South	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	4.8		GPM	
Twin Springs South	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	5.8		GPM	
Twin Springs South	Spring	Q4-2015	Quarterly	12/16/2015	Flow Rate	4.9		GPM	
Twin Springs South	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	4.6		GPM	

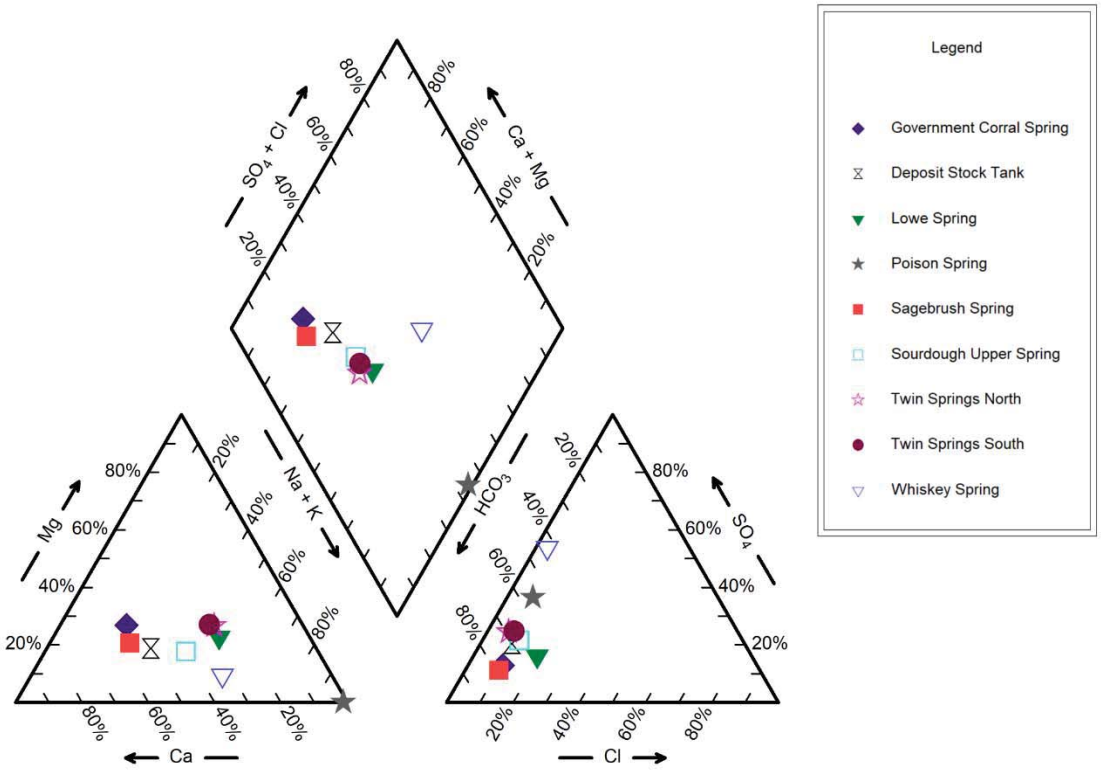
Twin Springs South	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	5.85		GPM	
Twin Springs South	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	12.97		GPM	
Twin Springs South	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	9.26		GPM	
Twin Springs South	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	9.24		GPM	
Twin Springs South	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	8.22		GPM	
Twin Springs South	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	10.75		GPM	
Twin Springs South	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	9.89		GPM	
Twin Springs South	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	9.81		GPM	
West Grassy Mountain Spring	Spring	Q2-2013	SemiAnnual	4/10/2013	Flow Rate	ND		GPM	Water seeping from ground. Unable to measure.
West Grassy Mountain Spring	Spring	Q4-2013	SemiAnnual	11/18/2013	Flow Rate	ND		GPM	Water seeping from ground. Unable to measure.
West Grassy Mountain Spring	Spring	Q2-2014	SemiAnnual	6/25/2014	Flow Rate	ND		GPM	Ground dry. No measurement.
West Whiskey Spring	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure. Nearby tanks dry.
West Whiskey Spring	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure. Nearby tanks dry.
West Whiskey Spring	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Water emanates from ground. Unable to measure. Nearby tanks dry.
Whiskey Spring	Spring	Q1-2013	Quarterly	3/17/2013	Flow Rate	0.90		GPM	
Whiskey Spring	Spring	Q2-2013	Quarterly	6/27/2013	Flow Rate	0.83		GPM	
Whiskey Spring	Spring	Q3-2013	Quarterly	8/14/2013	Flow Rate	0.88		GPM	
Whiskey Spring	Spring	Q4-2013	Quarterly	11/23/2013	Flow Rate	0.90		GPM	
Whiskey Spring	Spring	Q1-2014	Quarterly	3/16/2014	Flow Rate	0.86		GPM	
Whiskey Spring	Spring	Q2-2014	Quarterly	6/23/2014	Flow Rate	0.77		GPM	
Whiskey Spring	Spring	Q3-2014	Quarterly	9/16/2014	Flow Rate	0.83		GPM	
Whiskey Spring	Spring	Q4-2014	Quarterly	12/10/2014	Flow Rate	0.86		GPM	
Whiskey Spring	Spring	Q1-2015	Quarterly	3/18/2015	Flow Rate	0.86		GPM	
Whiskey Spring	Spring	Q2-2015	Quarterly	5/6/2015	Flow Rate	0.66		GPM	
Whiskey Spring	Spring	Q3-2015	Quarterly	9/23/2015	Flow Rate	0.83		GPM	
Whiskey Spring	Spring	Q4-2015	Quarterly	12/15/2015	Flow Rate	1		GPM	
Whiskey Spring	Spring	Q3-2016	Quarterly	9/29/2016	Flow Rate	0.98		GPM	
Whiskey Spring	Spring	Q4-2016	Quarterly	12/21/2016	Flow Rate	0.90		GPM	
Whiskey Spring	Spring	Q1-2017	Quarterly	3/22/2017	Flow Rate	0.95		GPM	
Whiskey Spring	Spring	Q2-2017	Quarterly	6/22/2017	Flow Rate	0.88		GPM	
Whiskey Spring	Spring	Q3-2017	Quarterly	9/26/2017	Flow Rate	0.98		GPM	
Whiskey Spring	Spring	Q4-2017	Quarterly	11/29/2017	Flow Rate	0.92		GPM	
Whiskey Spring	Spring	Q1-2018	Quarterly	3/7/2018	Flow Rate	0.95		GPM	
Whiskey Spring	Spring	Q2-2018	Quarterly	6/26/2018	Flow Rate	0.91		GPM	
Whiskey Spring	Spring	Q3-2018	Quarterly	9/26/2018	Flow Rate	0.96		GPM	
Wildcat Spring	Spring	Q2-2013	SemiAnnual	4/11/2013	Flow Rate	ND		GPM	Water seeps up around broken stock tank. Unable to measure.
Wildcat Spring	Spring	Q4-2013	SemiAnnual	11/21/2013	Flow Rate	ND		GPM	Water seeps up around broken stock tank. Unable to measure.
Wildcat Spring	Spring	Q2-2014	SemiAnnual	6/30/2014	Flow Rate	ND		GPM	Water seeps up around broken stock tank. Unable to measure.

Note:
ND = No Data

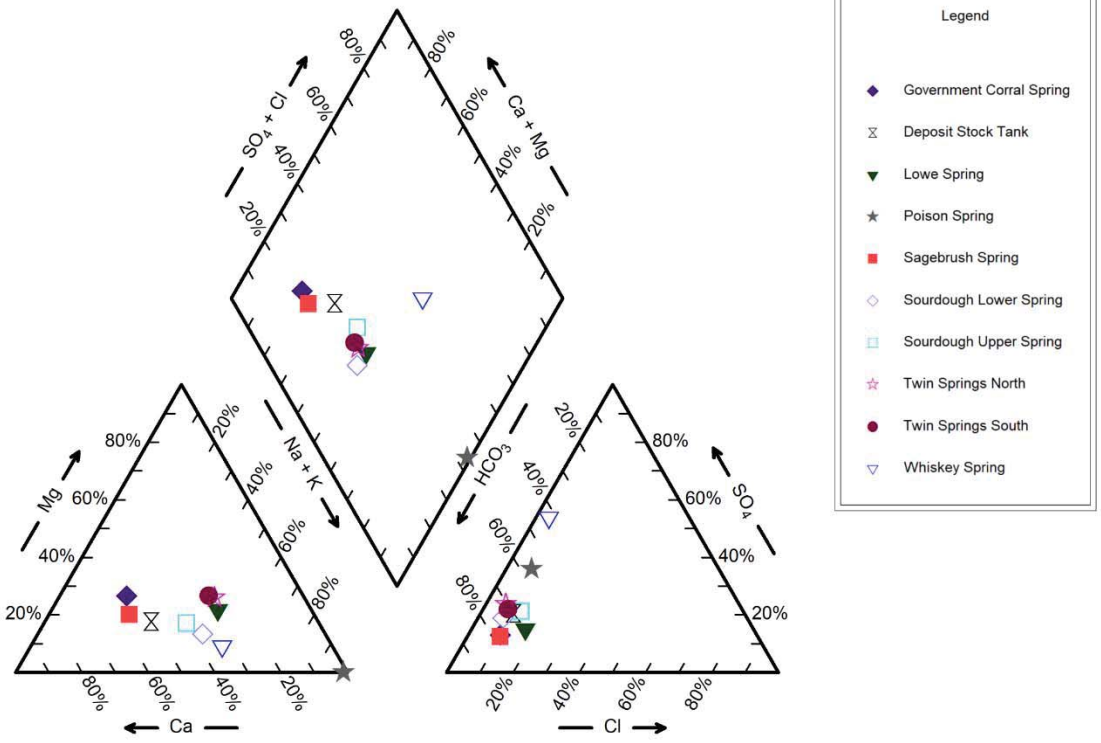
Appendix G
Water Quality Diagrams and Maps

G1 Spring Piper Diagrams

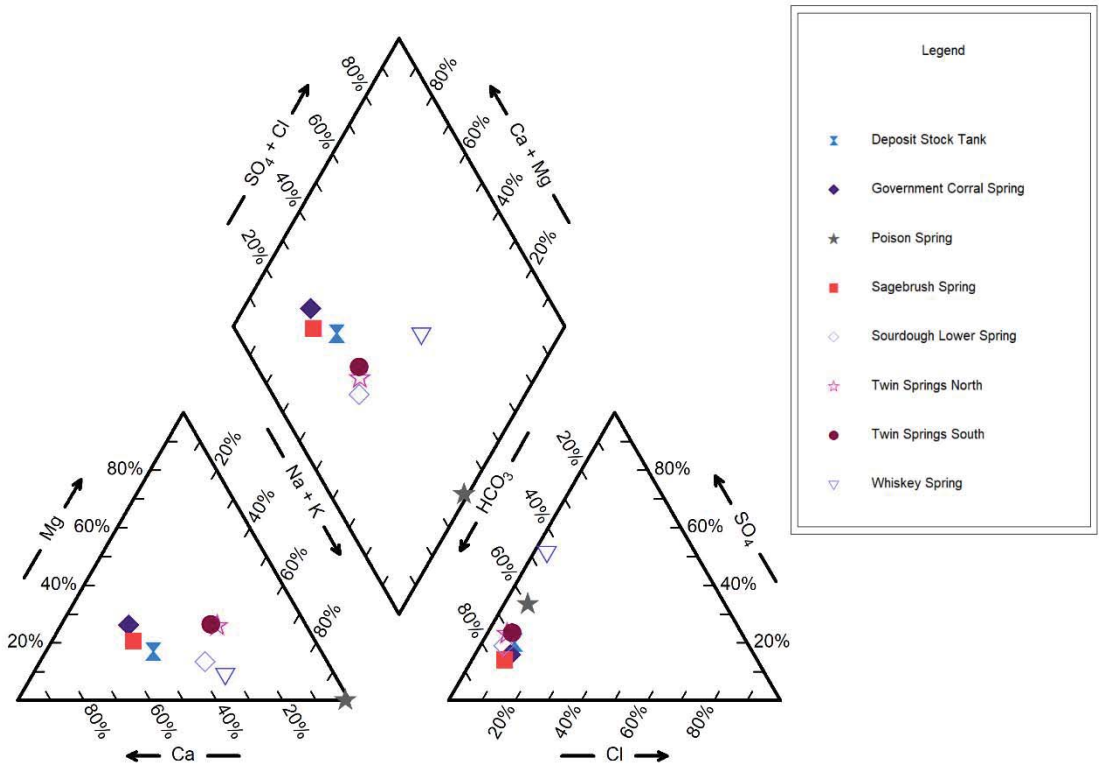
Piper Diagram-Springs Q1-2013



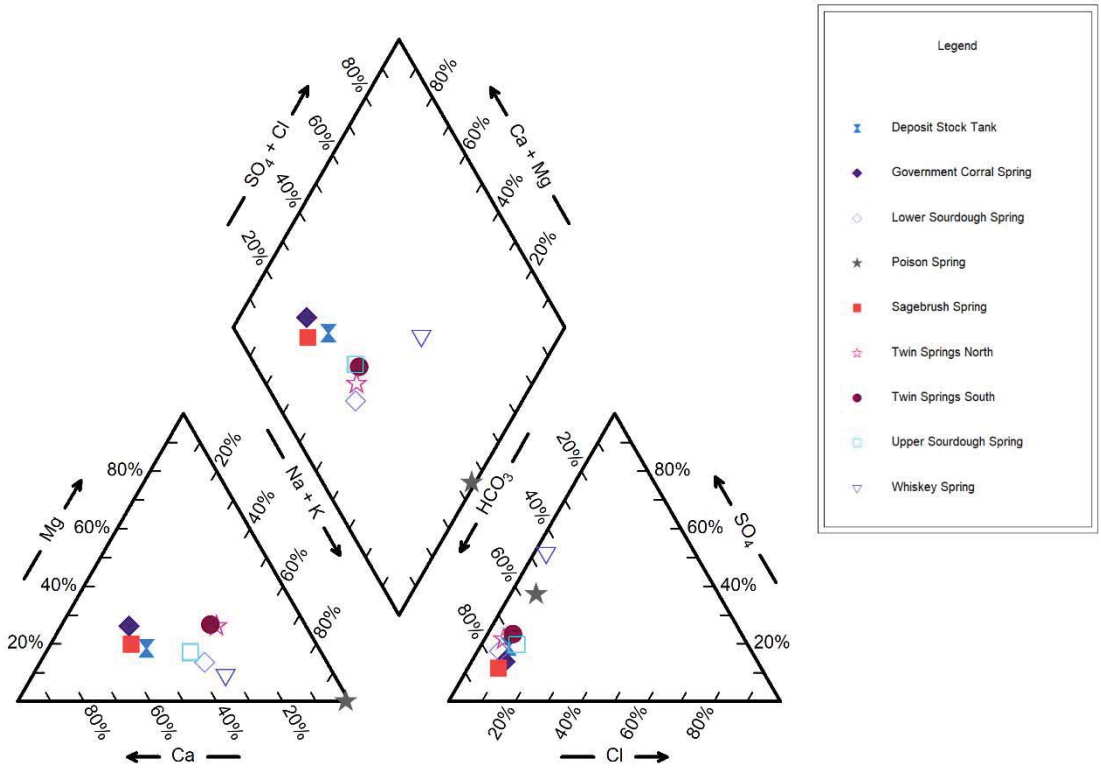
Piper Diagram- Springs Q2-2013



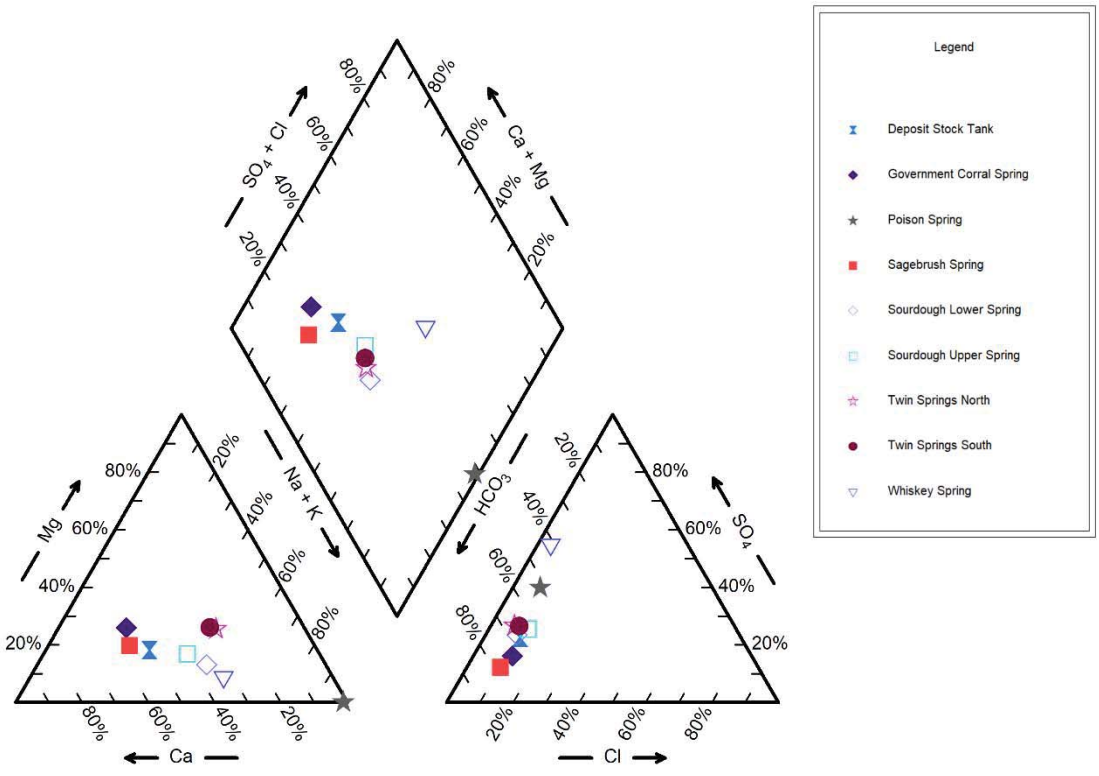
Piper Diagram-Springs Q3-2013



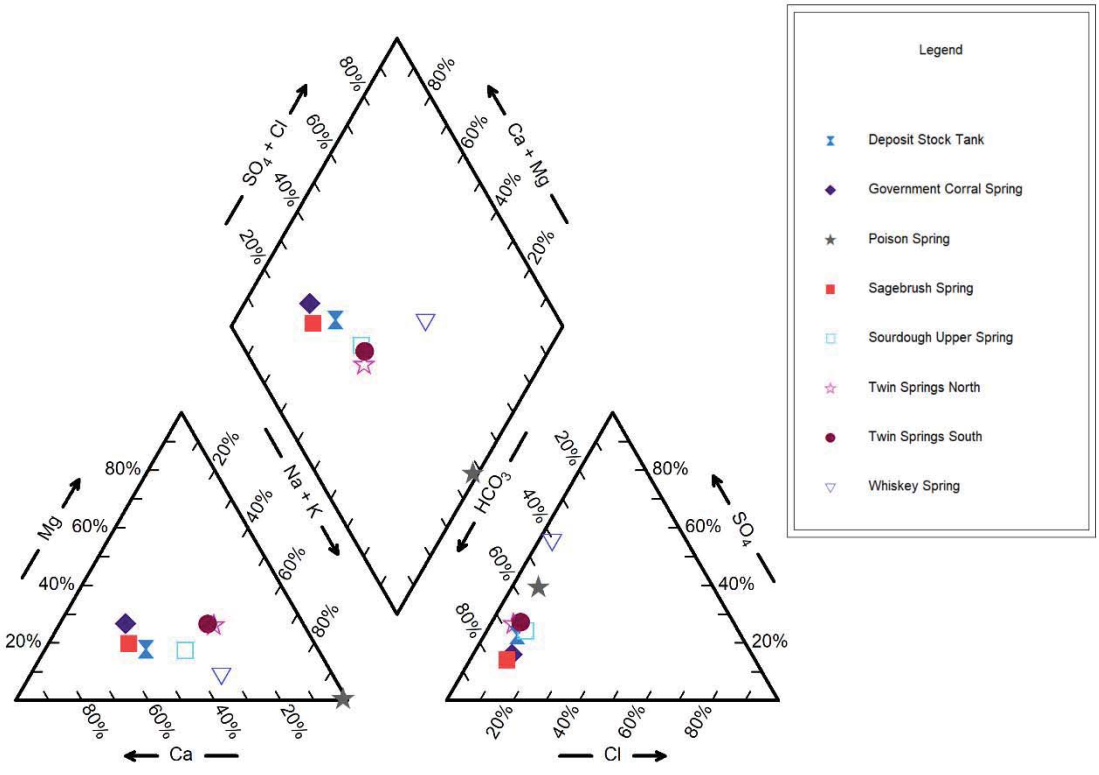
Piper Diagram-Springs Q4-2013



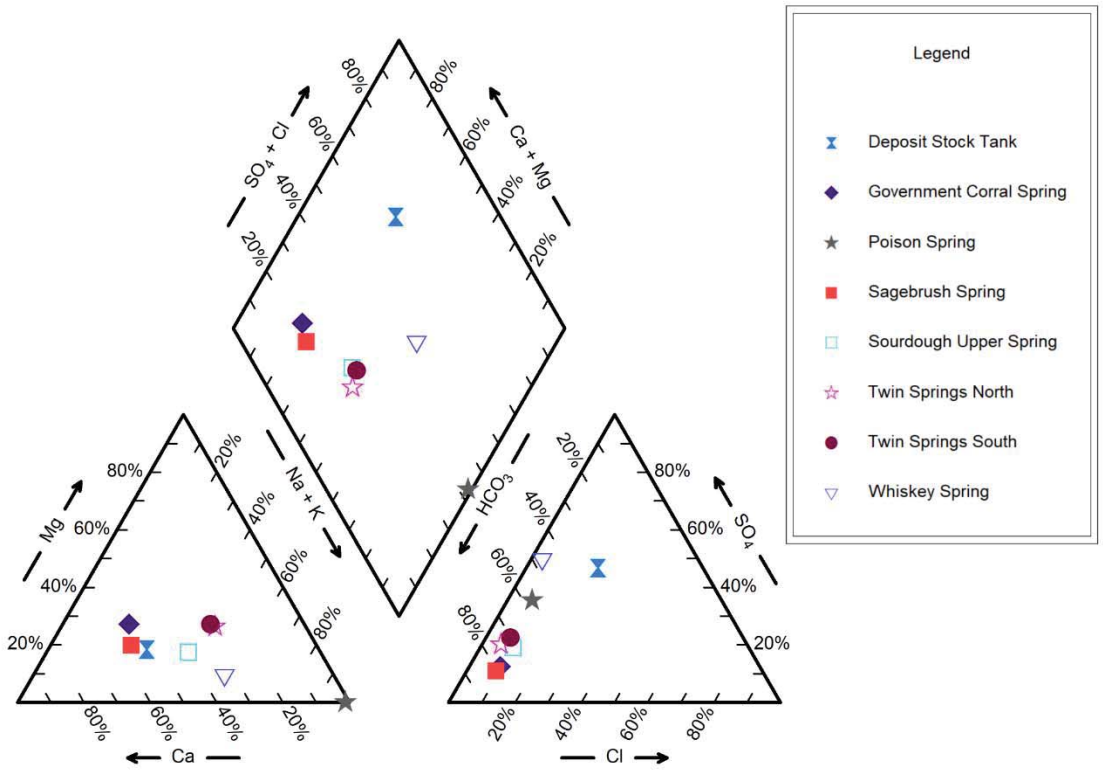
Piper Diagram-Springs Q1-2014



Piper Diagram- Springs Q2-2014



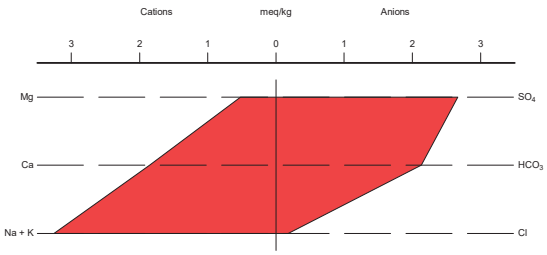
Piper Diagram- Springs Q3-2014



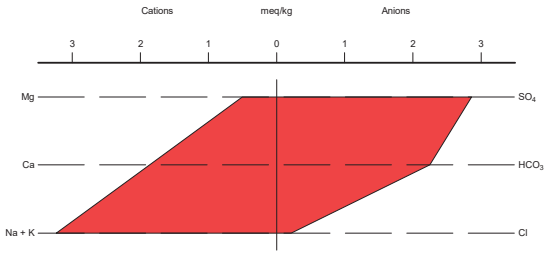
G2. Springs Stiff Diagrams

Whiskey Spring

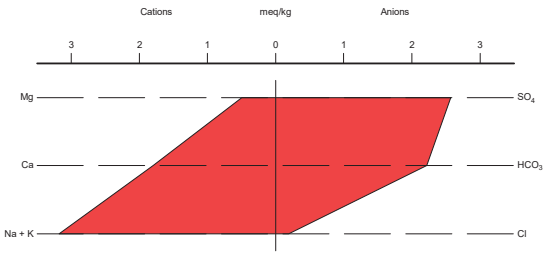
2013 Q1



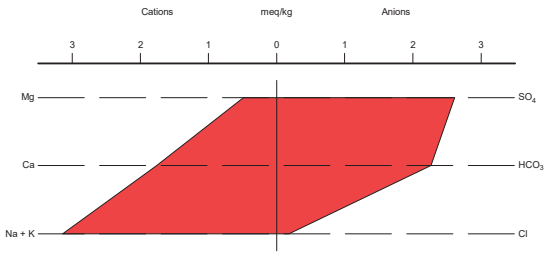
2013 Q2



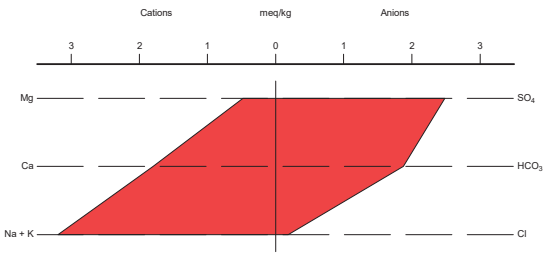
2013 Q3



2013 Q4



2014 Q1



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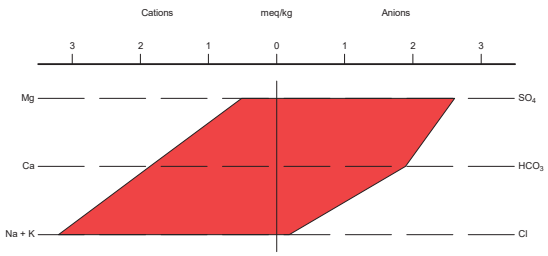
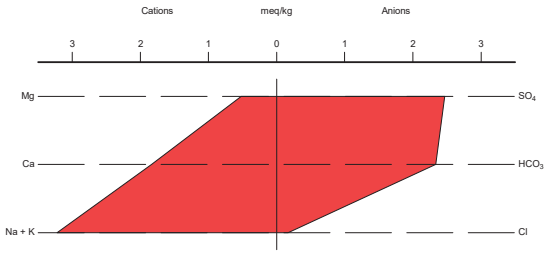
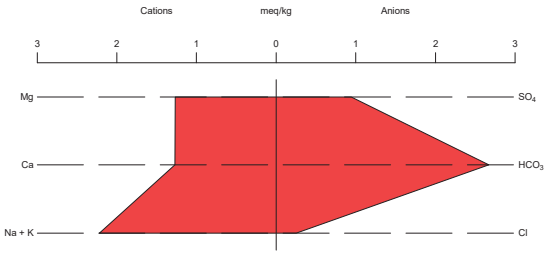


2014 Q3

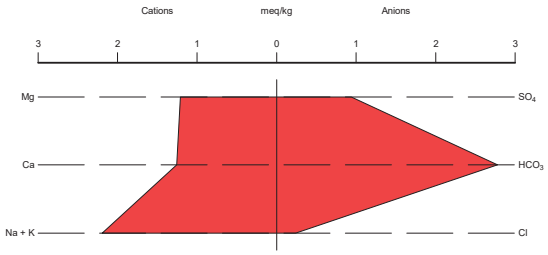


Twin Springs North

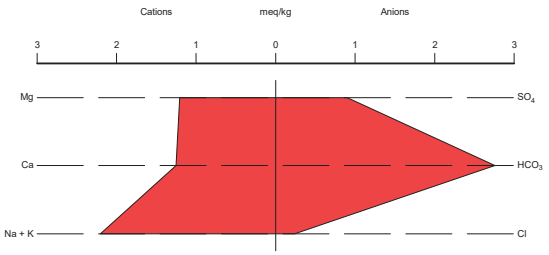
2013 Q1



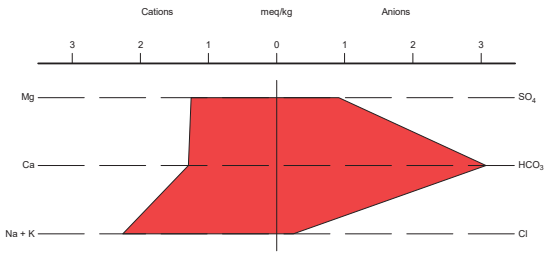
2013 Q2



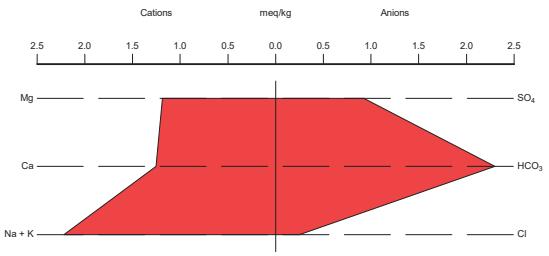
2013 Q3



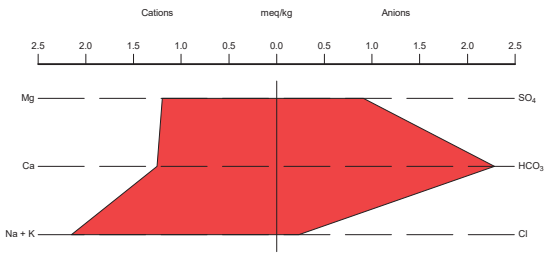
2013 Q4



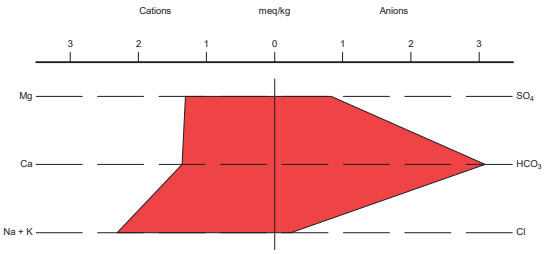
2014 Q1



2014 Q2

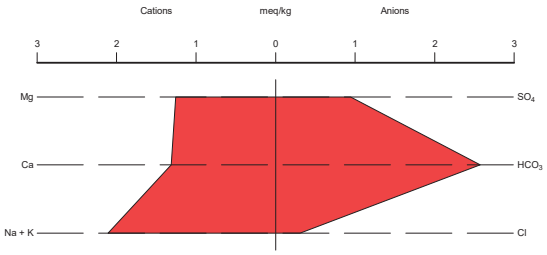


2014 Q3

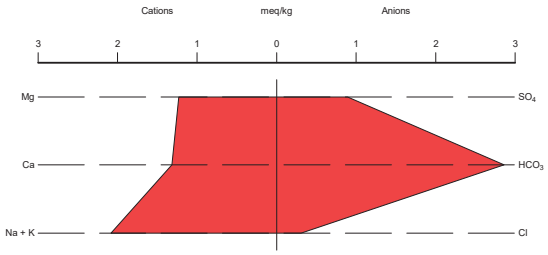


Twin Springs South

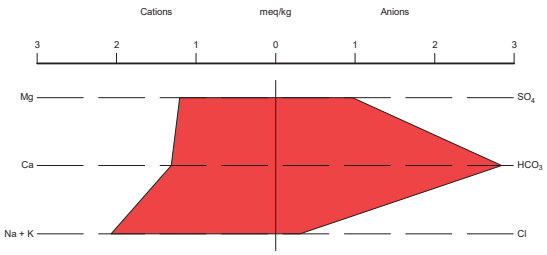
2013 Q1



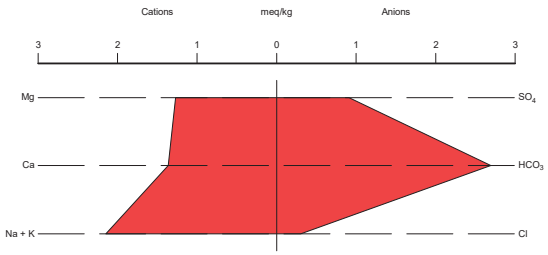
2013 Q2



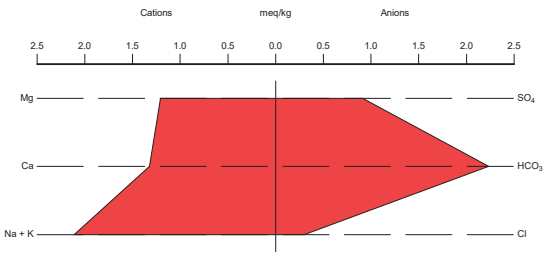
2013 Q3



2013 Q4



2014 Q1



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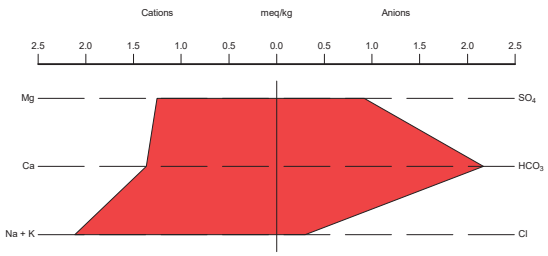
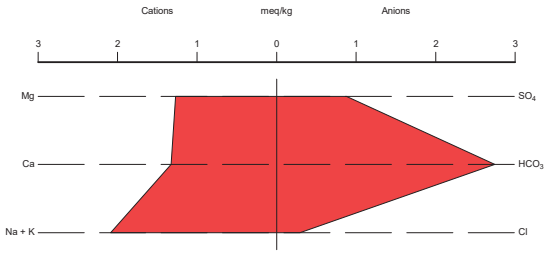
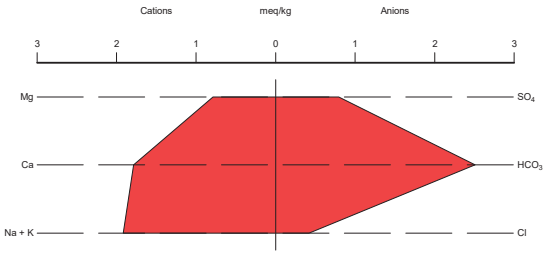


2014 Q3

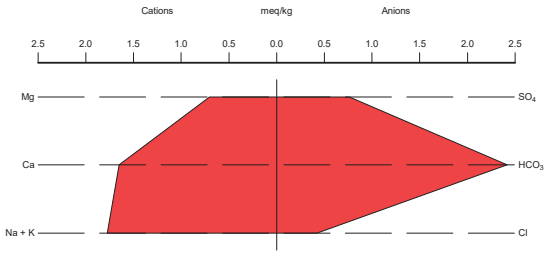


Sourdough Upper Spring

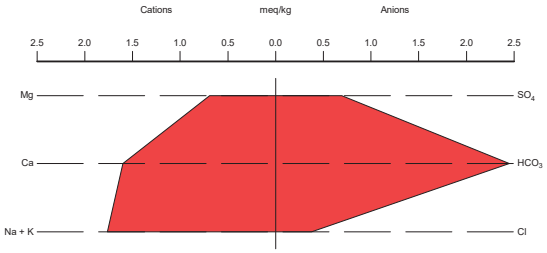
2013 Q1



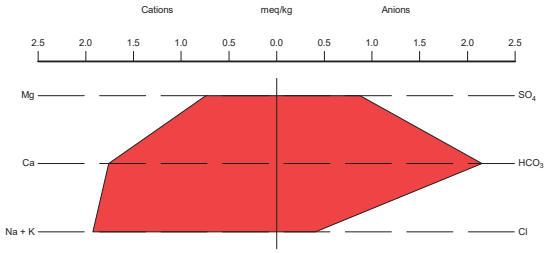
2013 Q2



2013 Q4



2014 Q1



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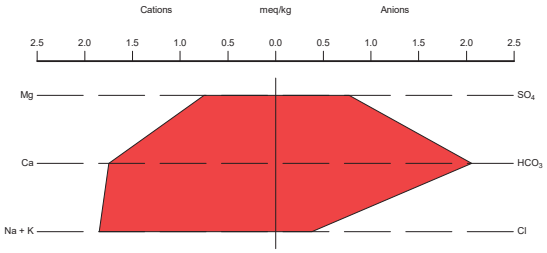
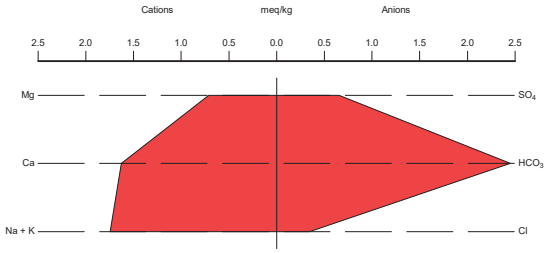
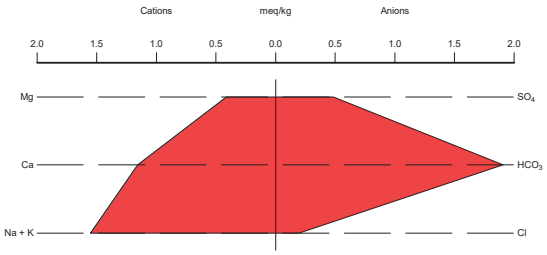


2014 Q3

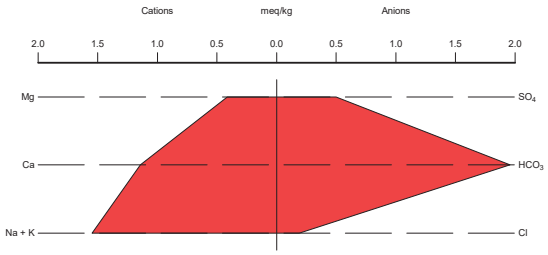


Sourdough Lower Spring

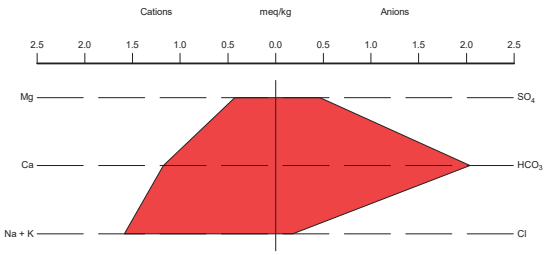
2013 Q2



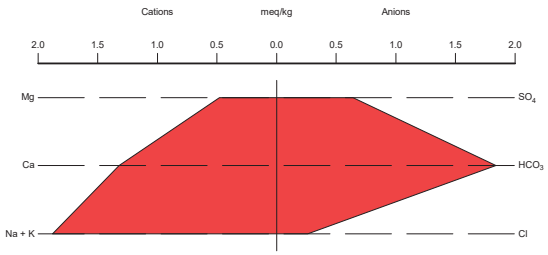
2013 Q3



2013 Q4

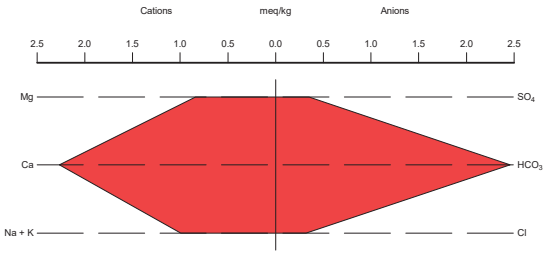


2014 Q1

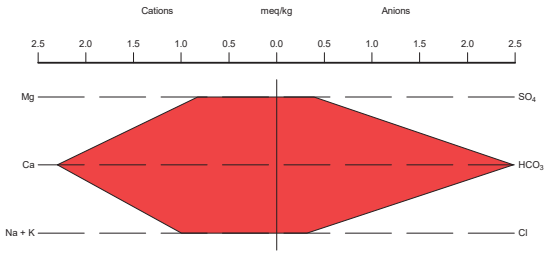


Sagebrush Spring

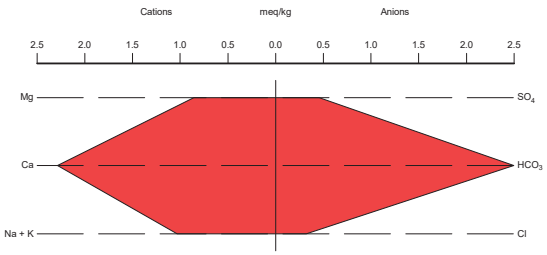
2013 Q1



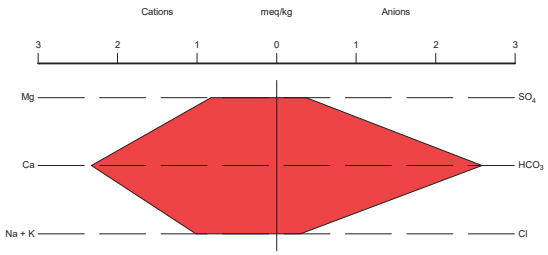
2013 Q2



2013 Q3



2013 Q4



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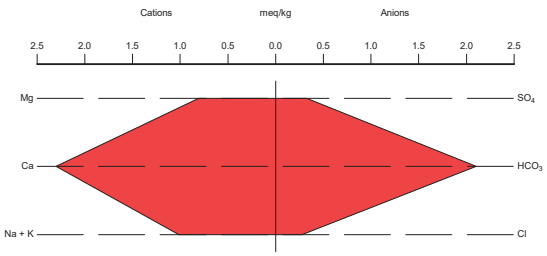

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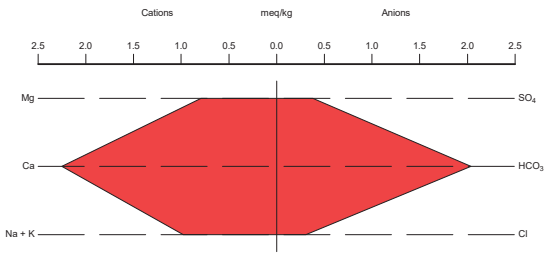

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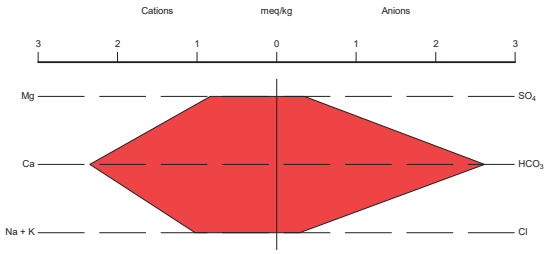
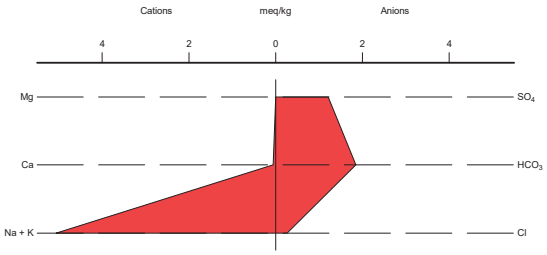


Poison Spring

2013 Q1



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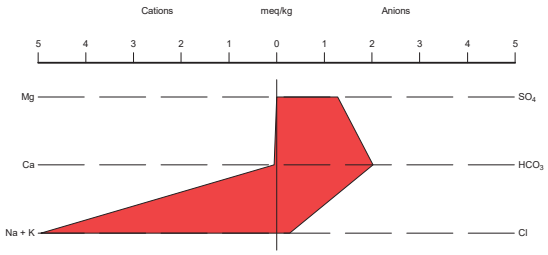

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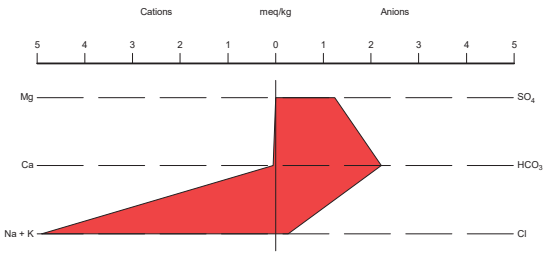

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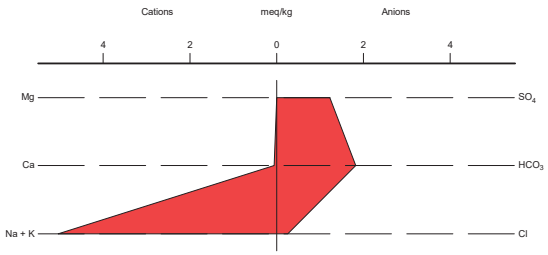

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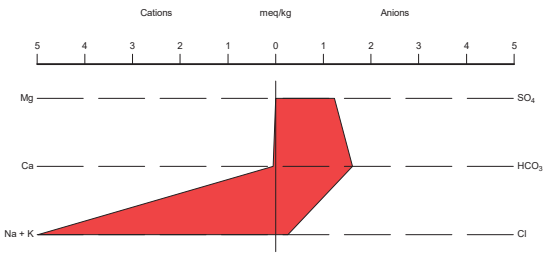

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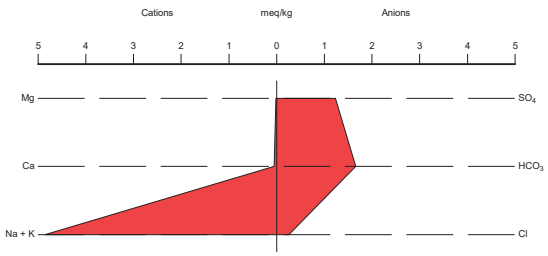

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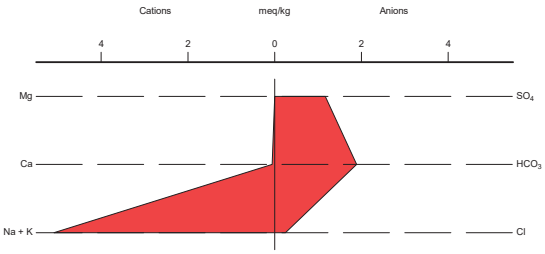
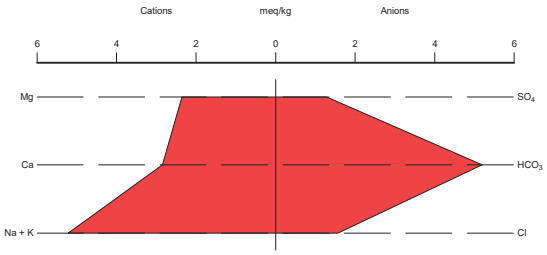


Lowe Spring

2013 Q1



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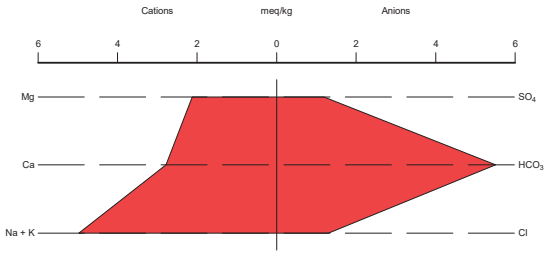
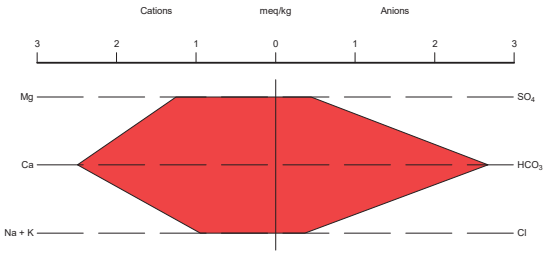


Government Corral Spring

2013 Q1



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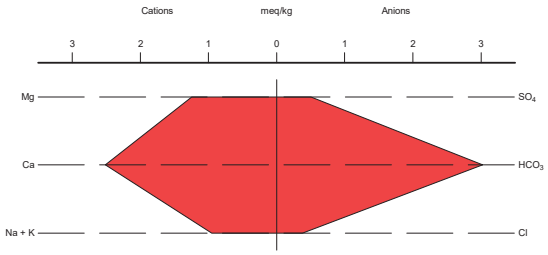

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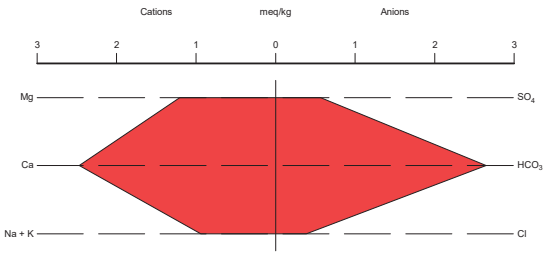

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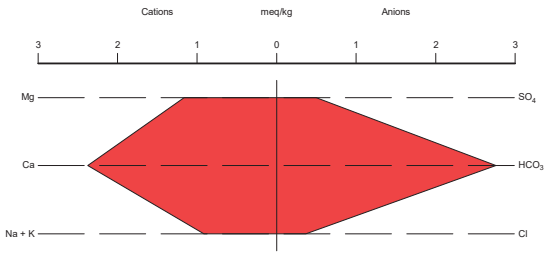
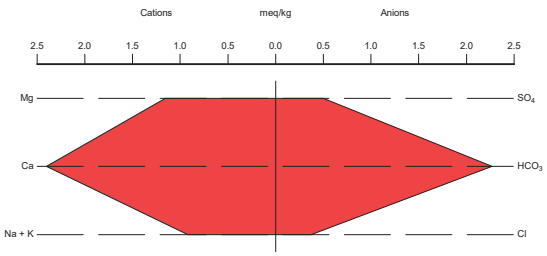


2014 Q1



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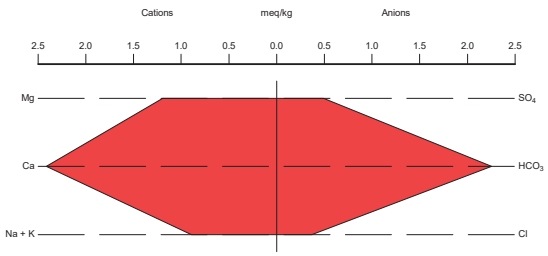

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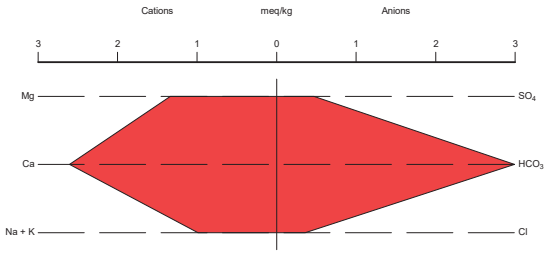
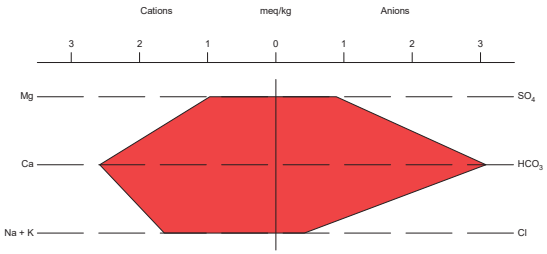


Deposit Stock Tank

2013 Q1



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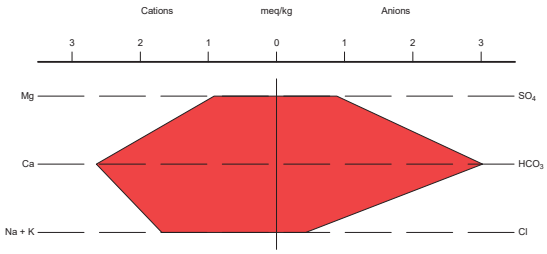

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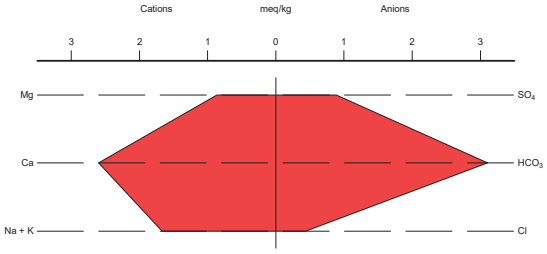

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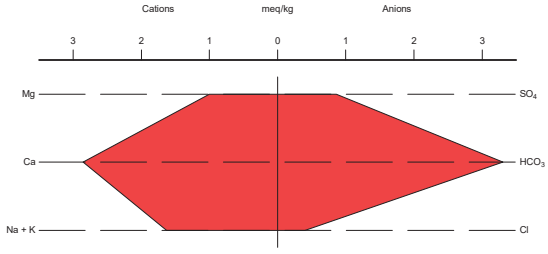

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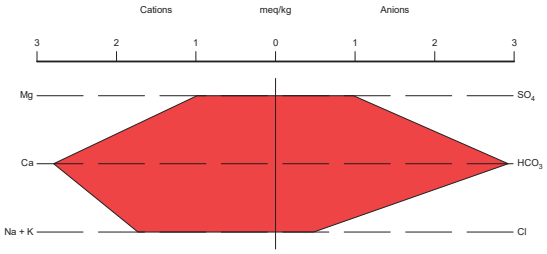

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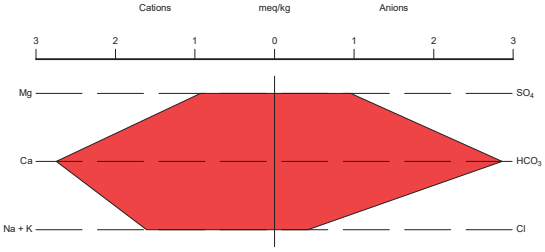

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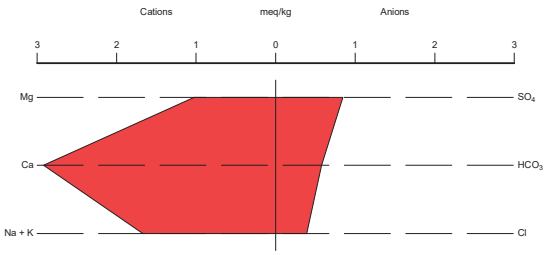
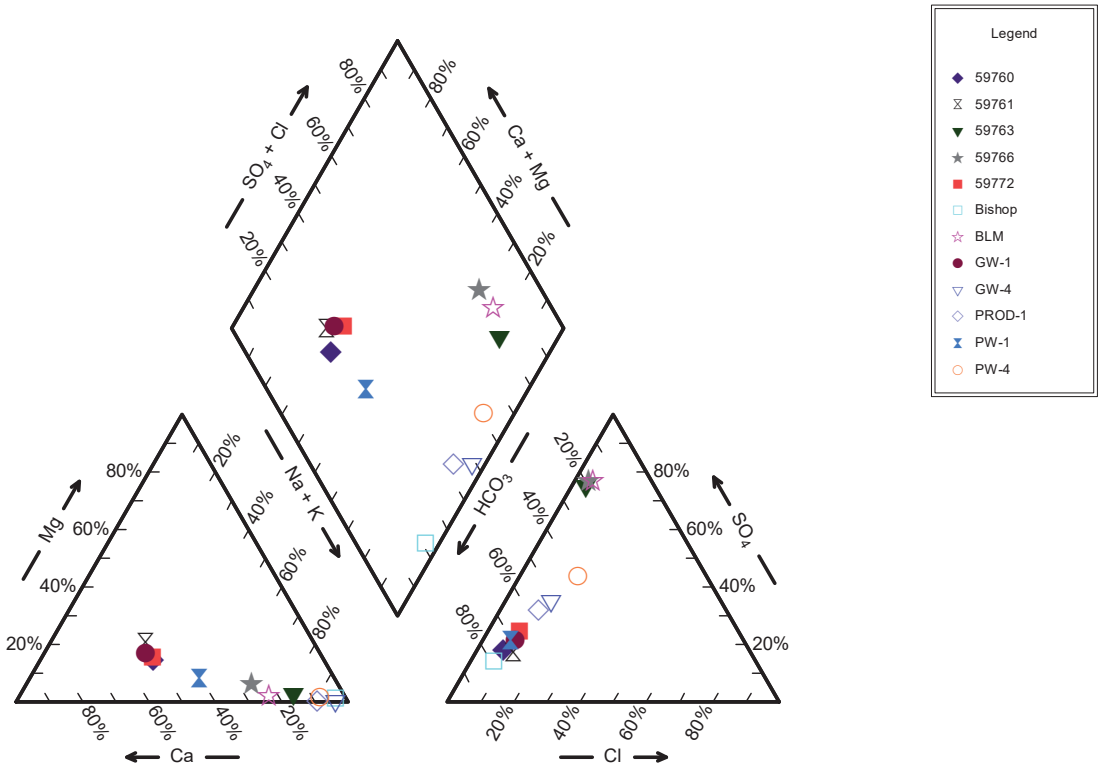
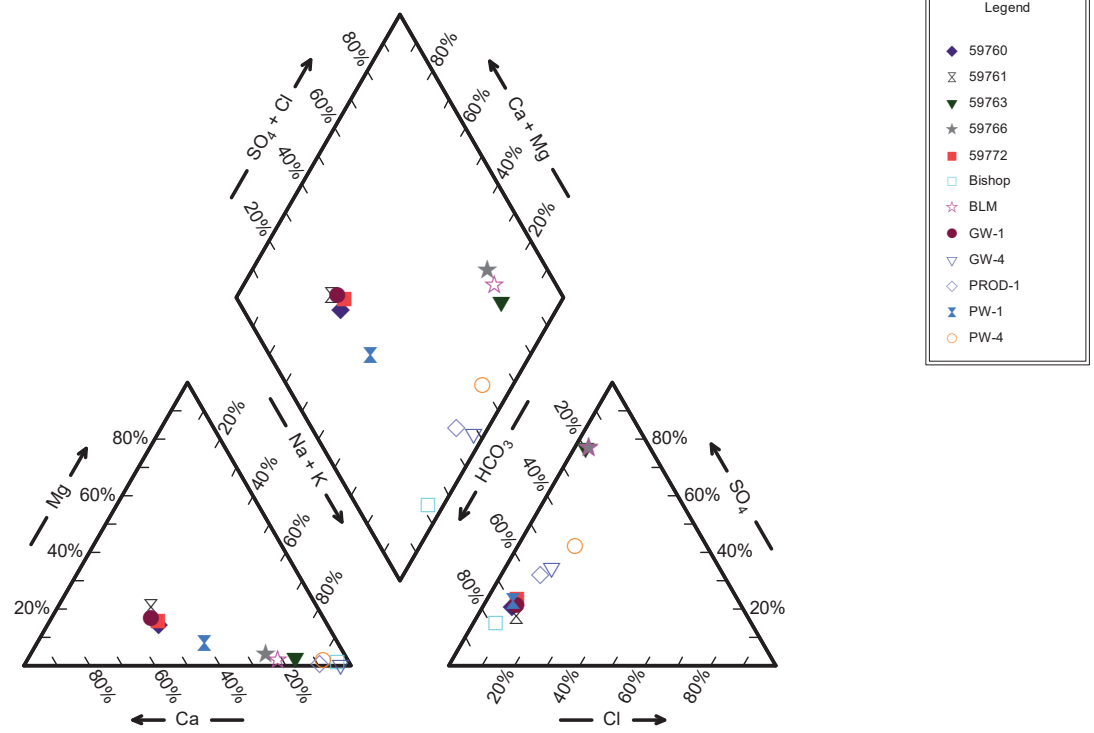


G3. Wells Piper Diagrams

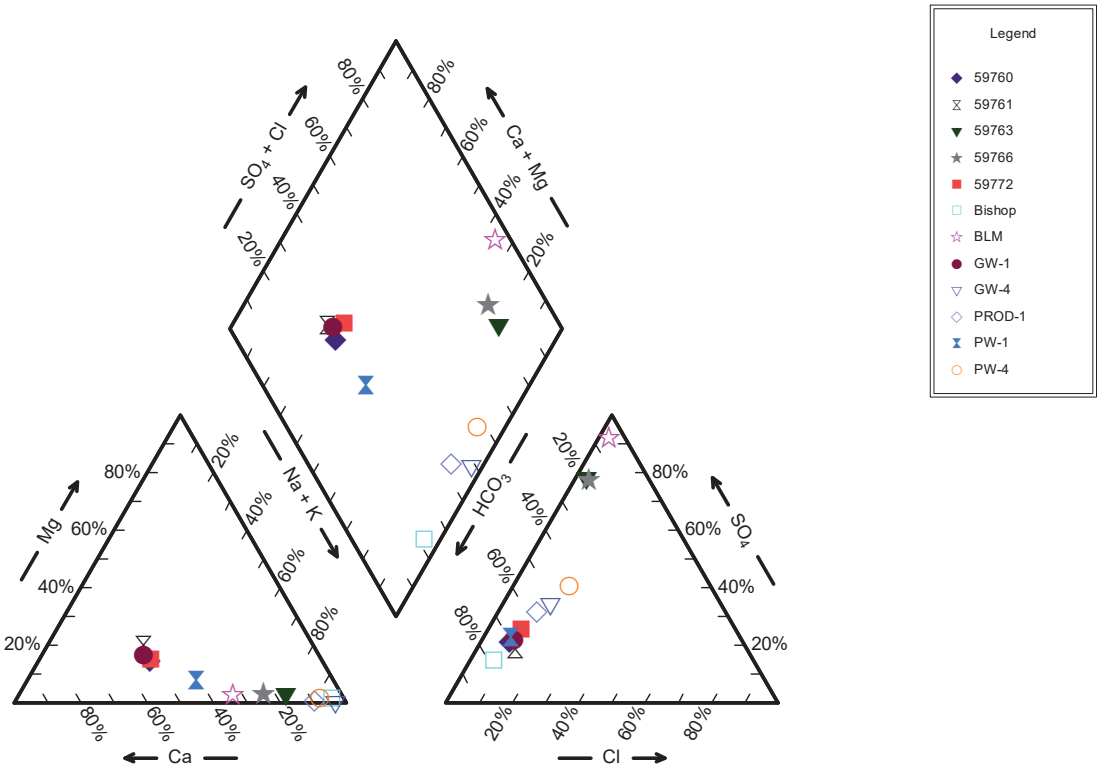
Piper Diagram-Wells Q1-2013



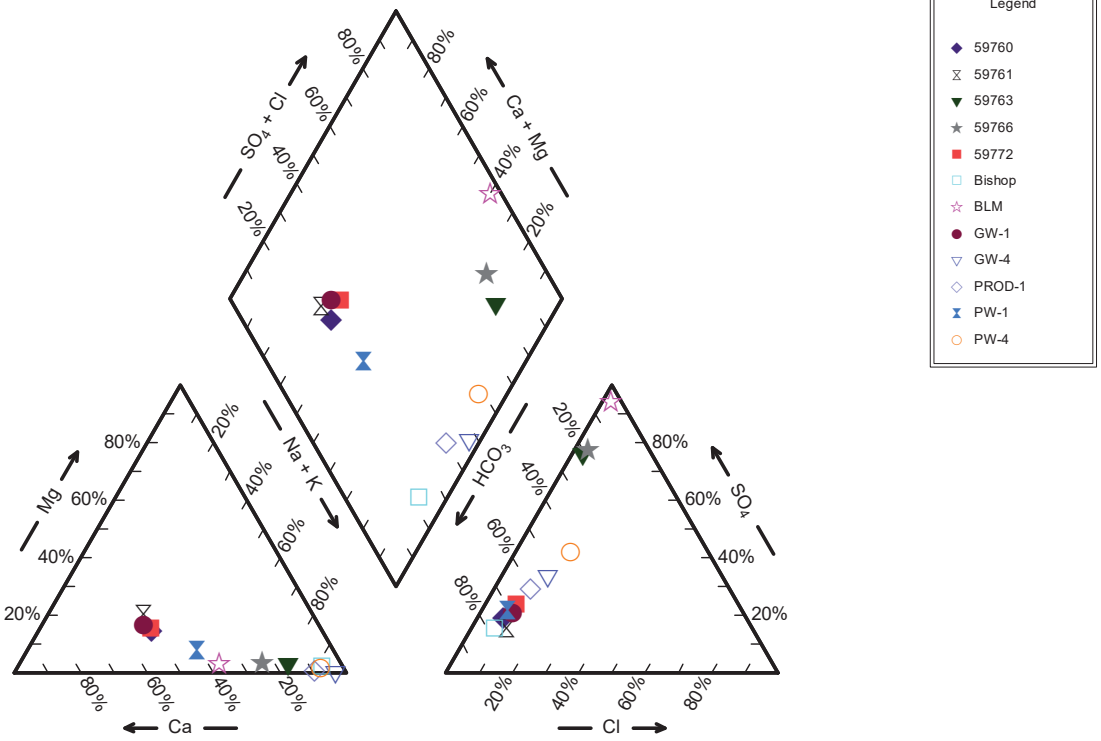
Piper Diagram-Wells Q2-2013



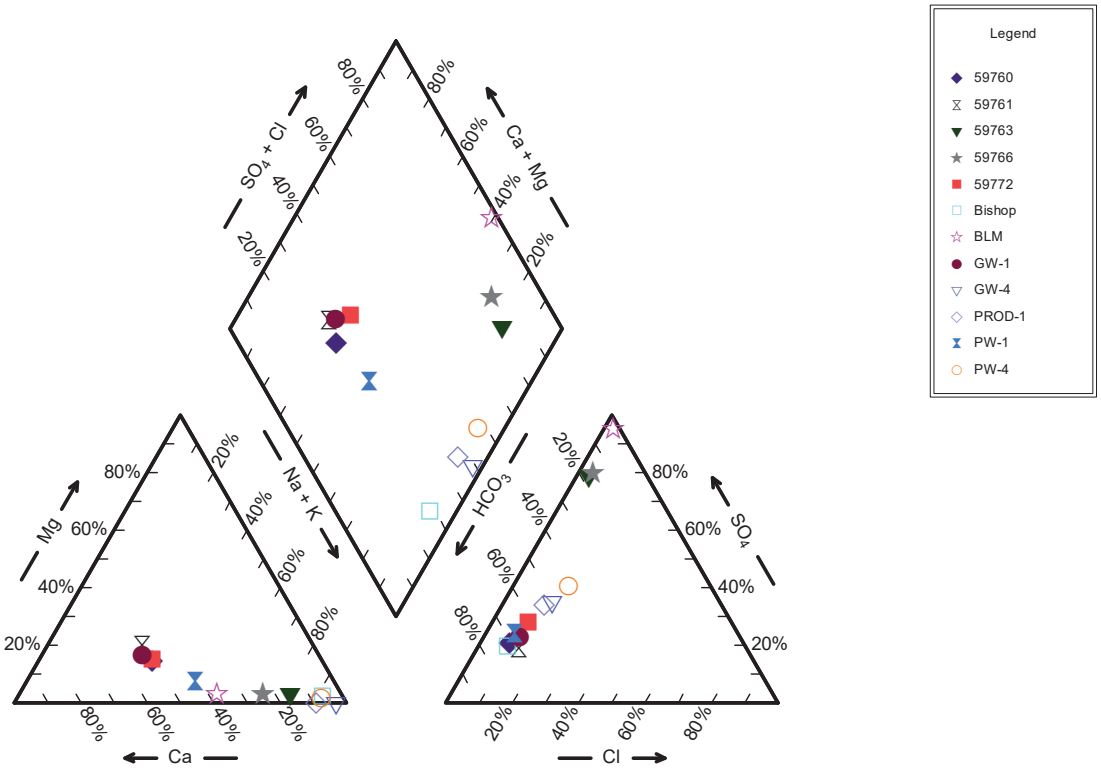
Piper Diagram-Wells Q3-2013



Piper Diagram-Wells Q4-2013



Piper Diagram-Wells Q1-2014



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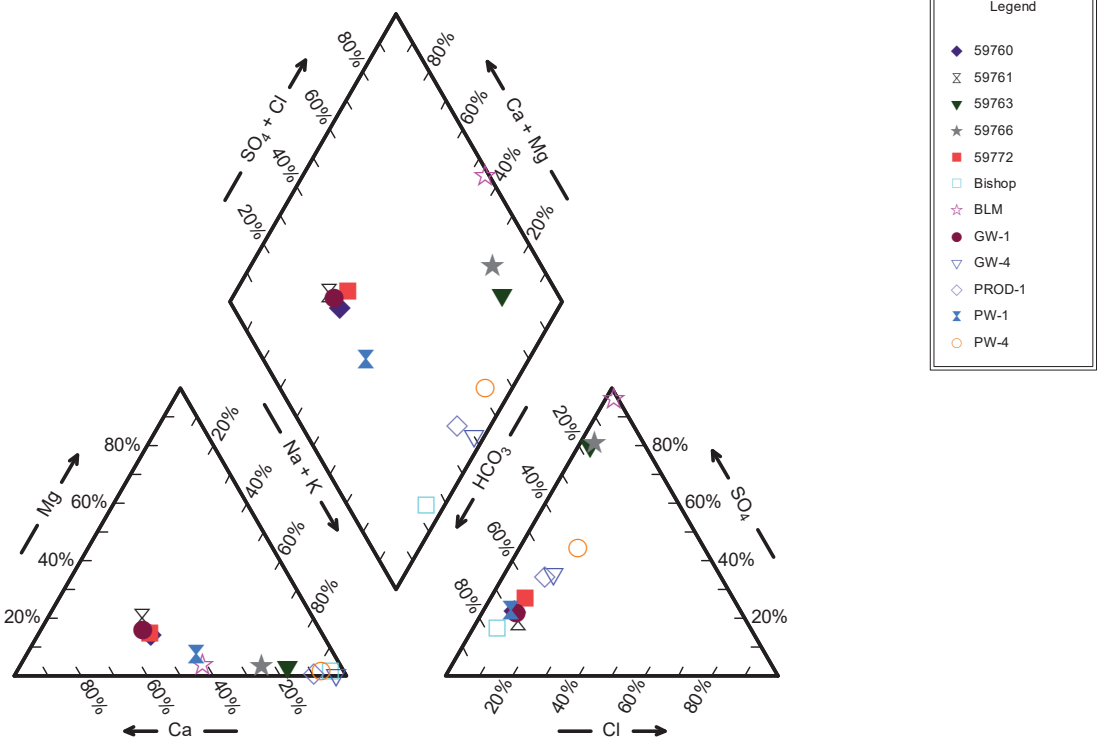
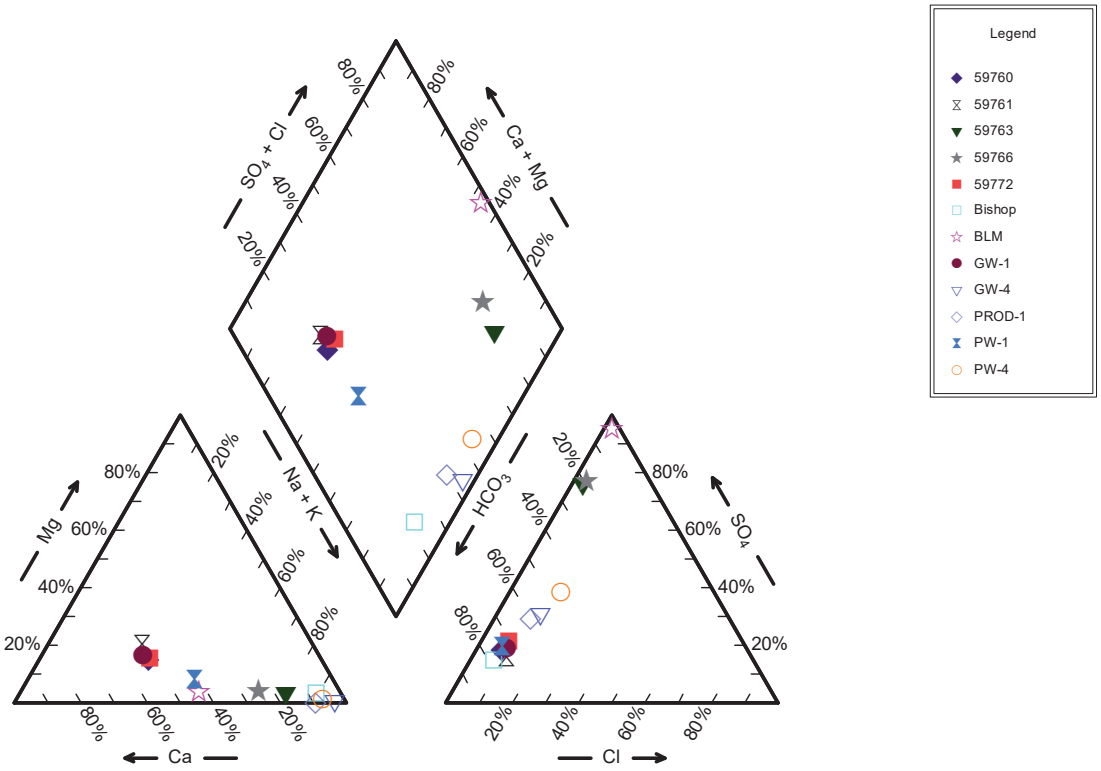
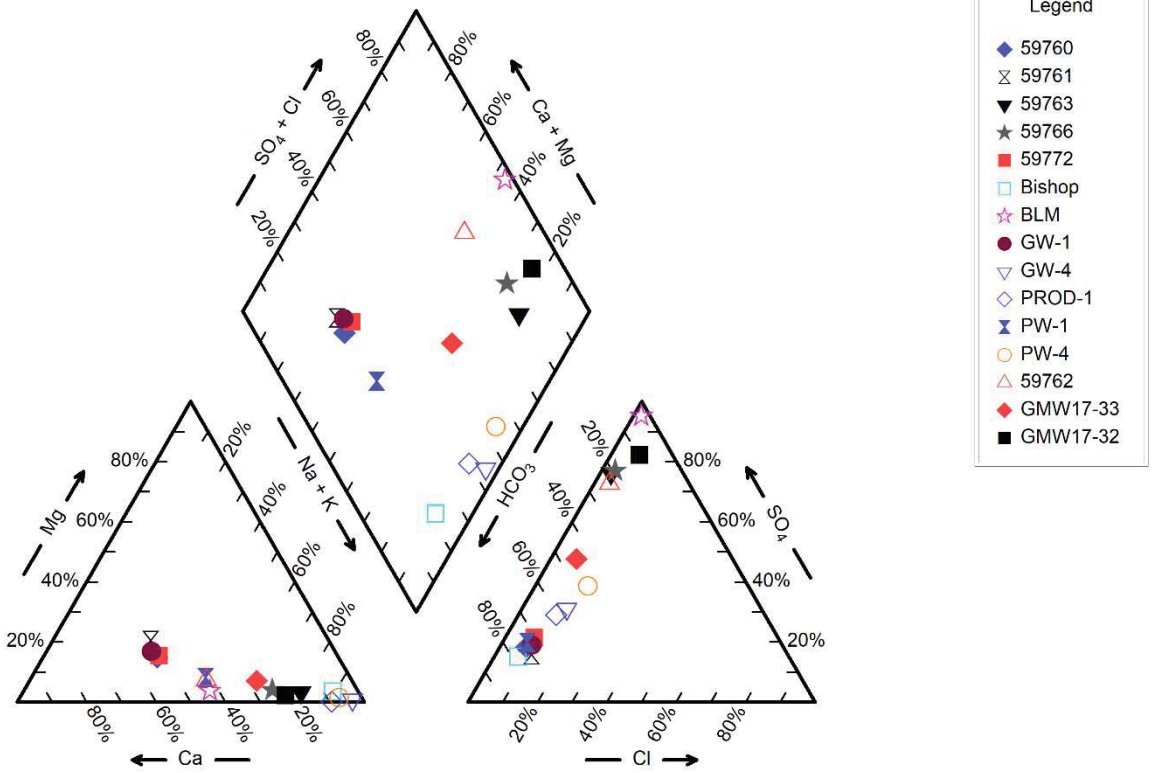


Piper Diagram-Wells Q3-2014



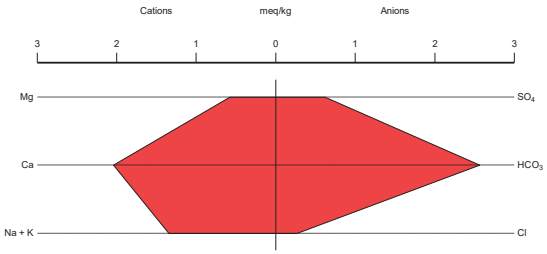
Piper Diagram - Wells Q3-2014 thru 2018



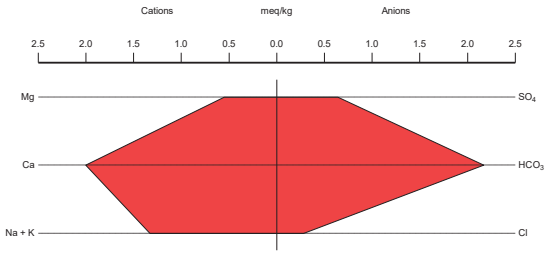
G4. Wells Stiff Diagrams

59760

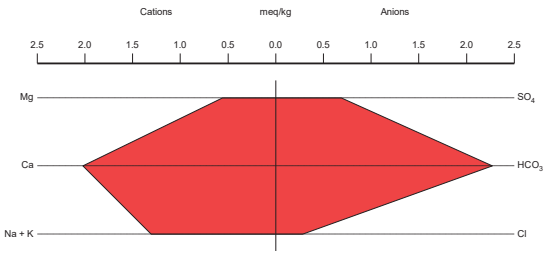
2013 Q1



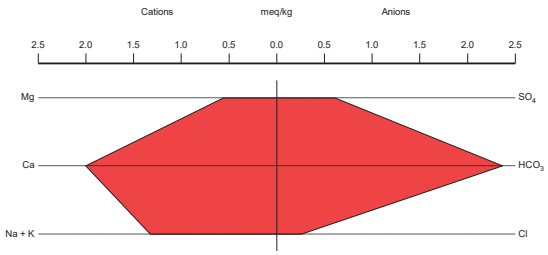
2013 Q2



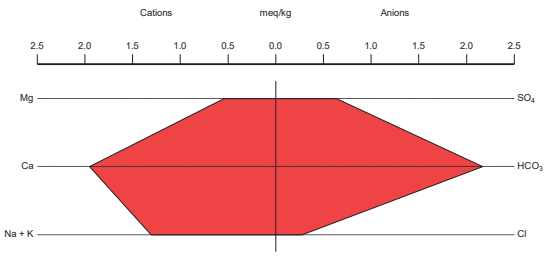
2013 Q3



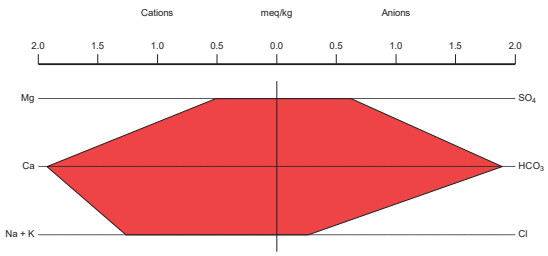
2013 Q4



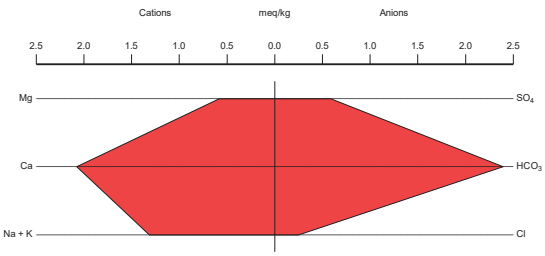
2014 Q1



2014 Q2

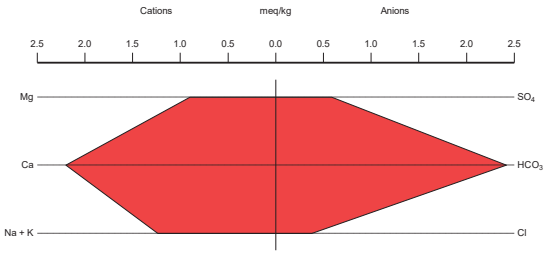


2014 Q3



59761

2013 Q1



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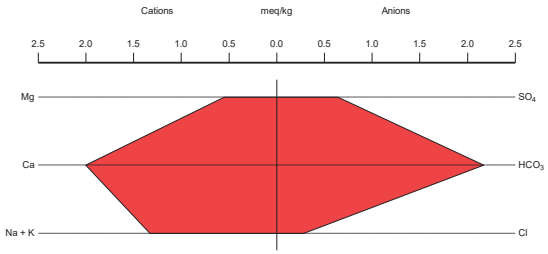

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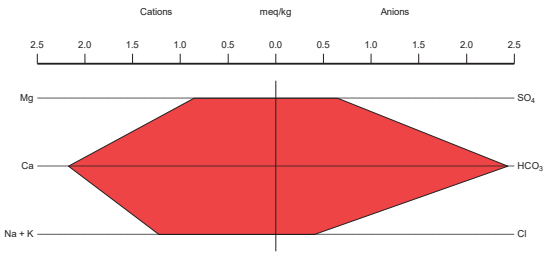

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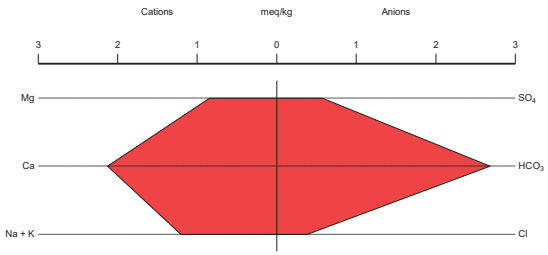
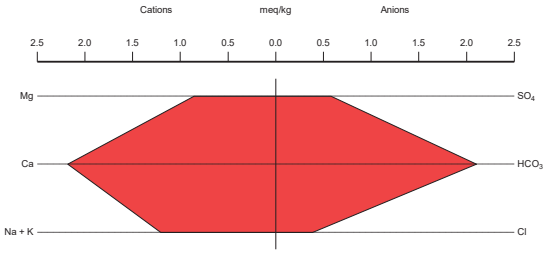


2014 Q1



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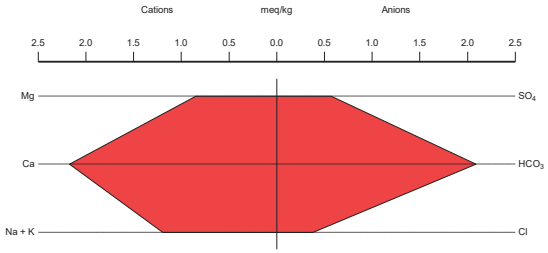
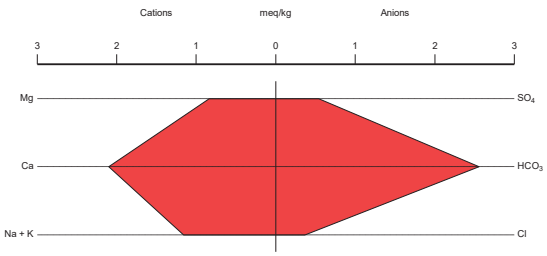
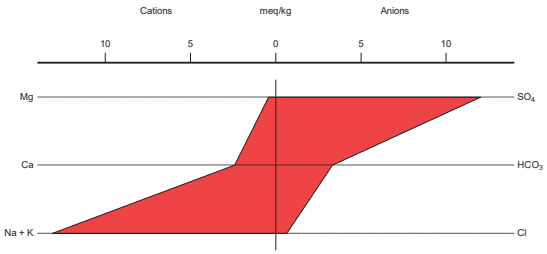


2014 Q3



59763

2013 Q1



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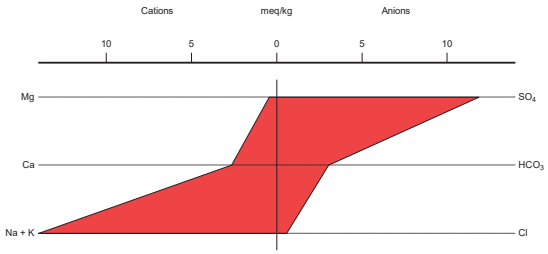

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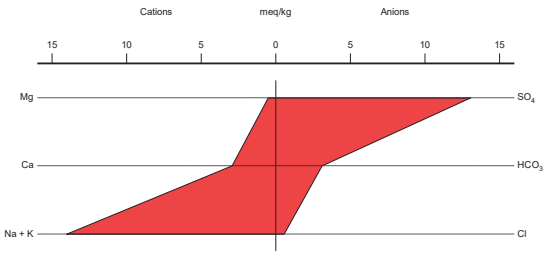

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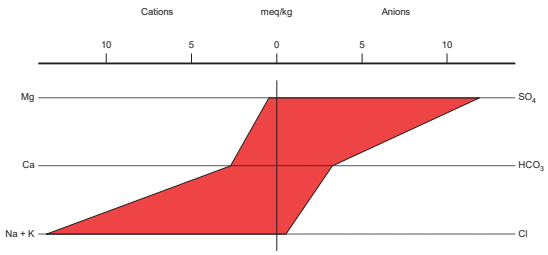
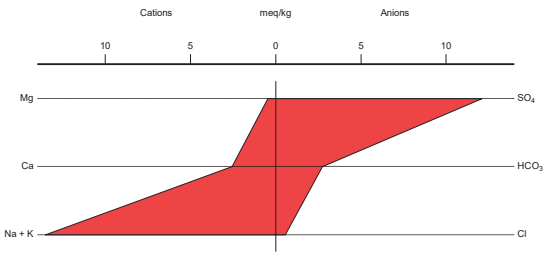


2014 Q1



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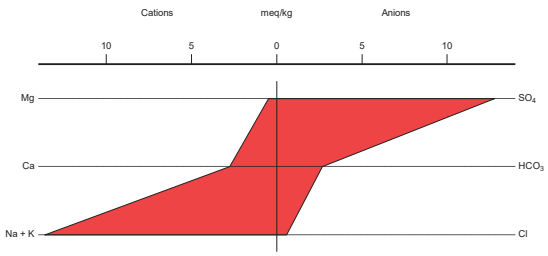
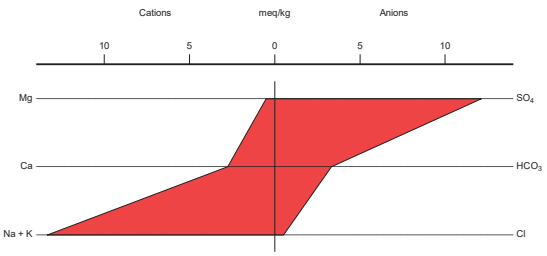


2014 Q3



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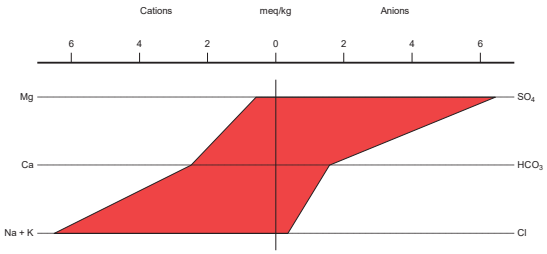

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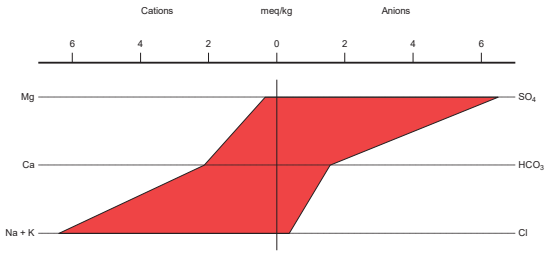

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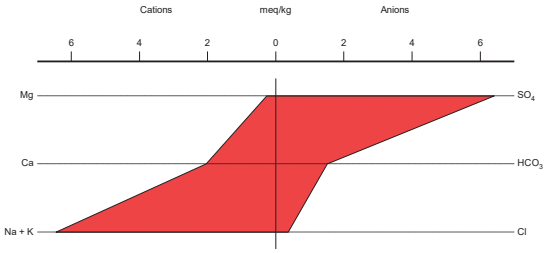

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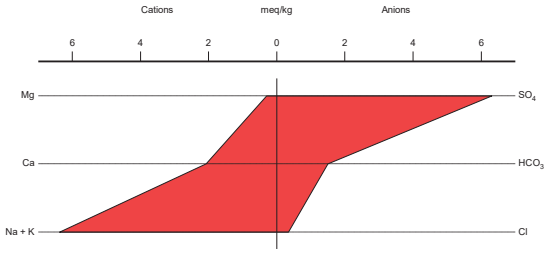

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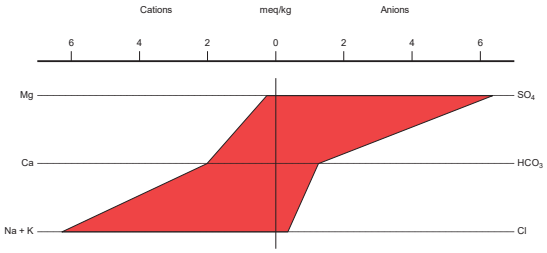

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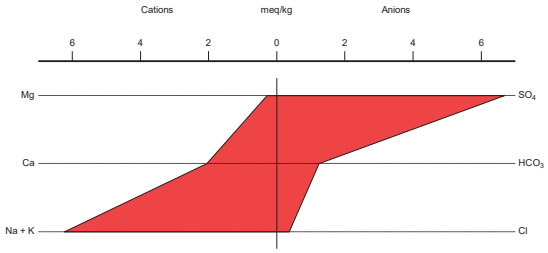

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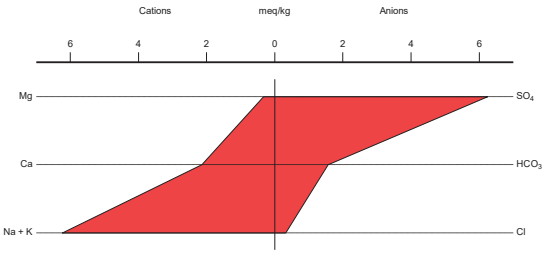

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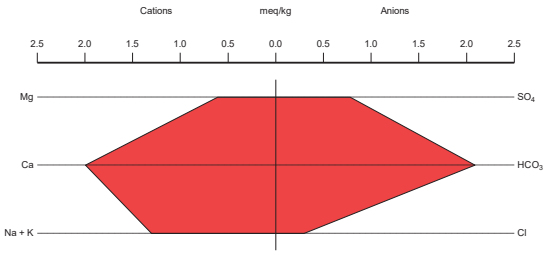

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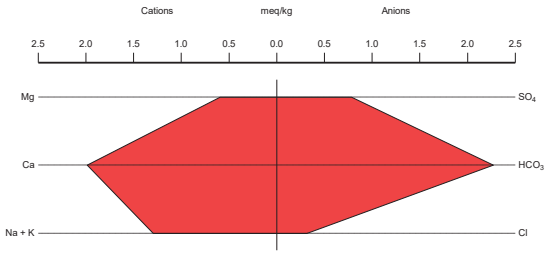

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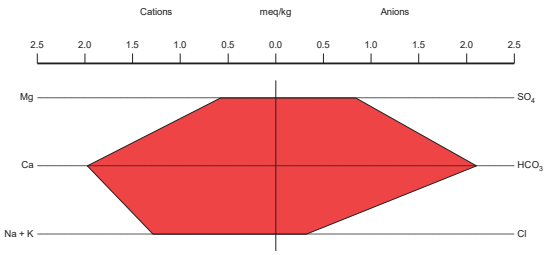

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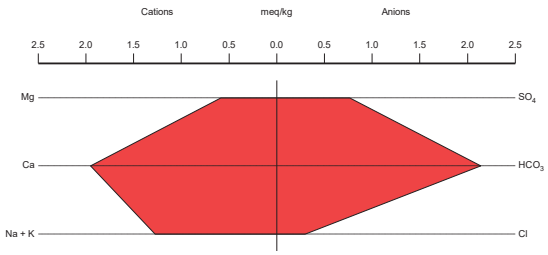

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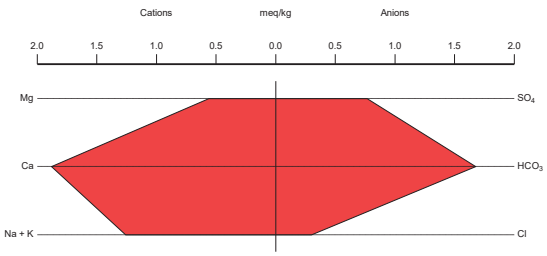

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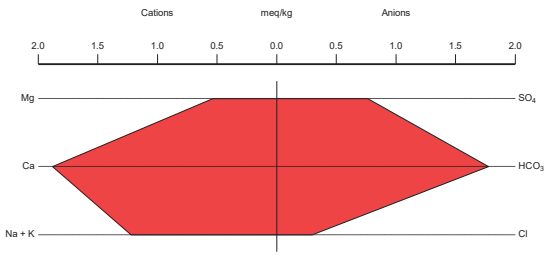

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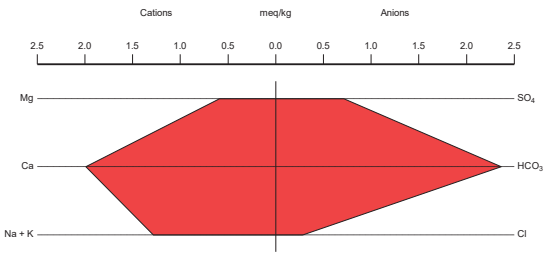

Bishop

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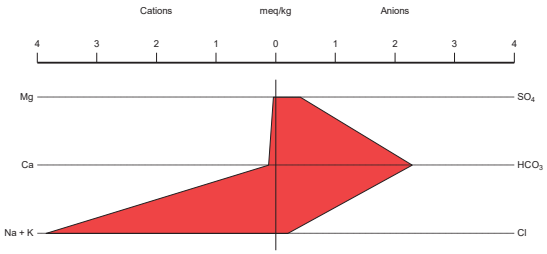

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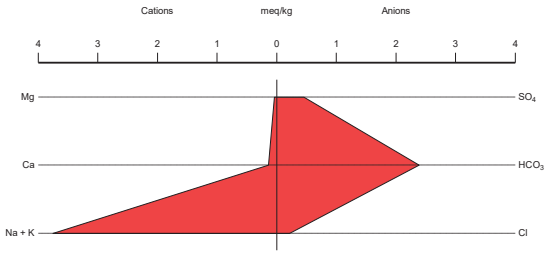

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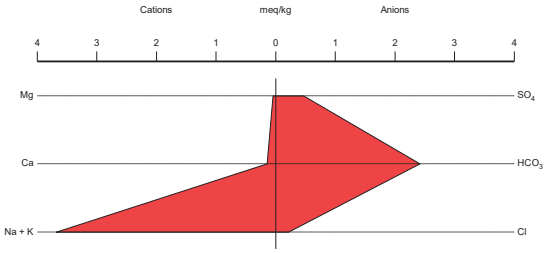

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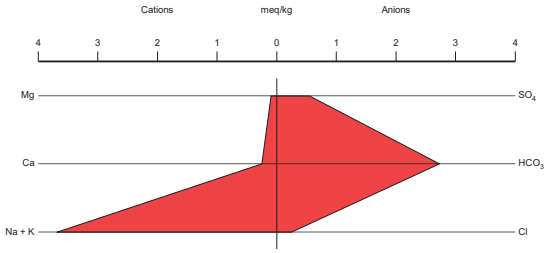

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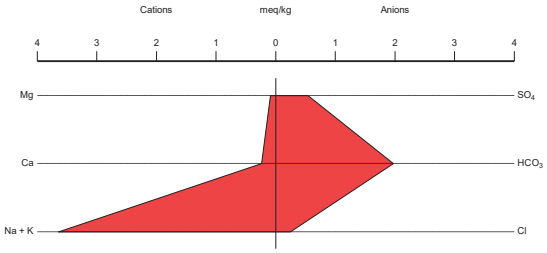

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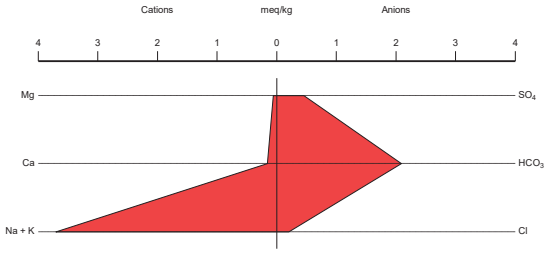

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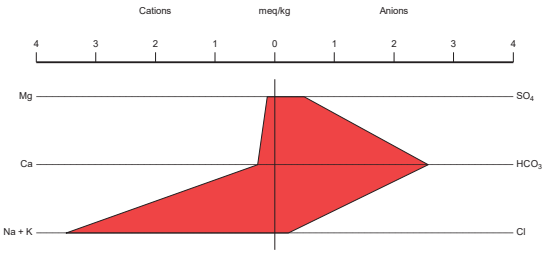

BLM

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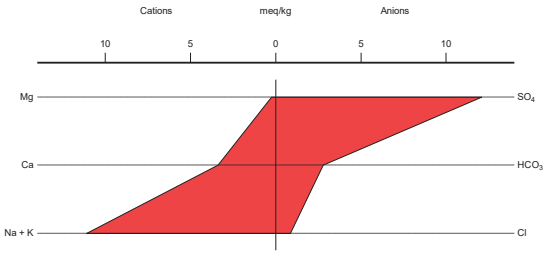

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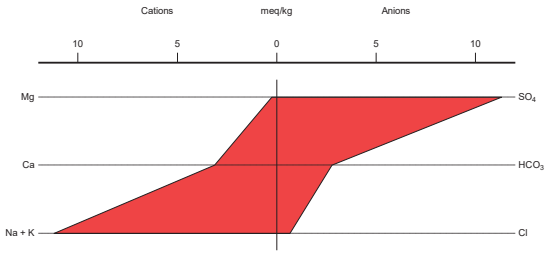

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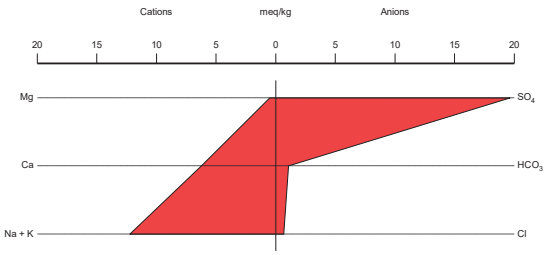

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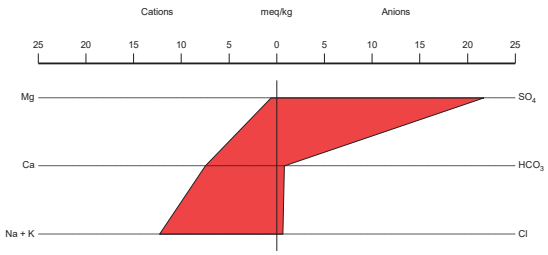

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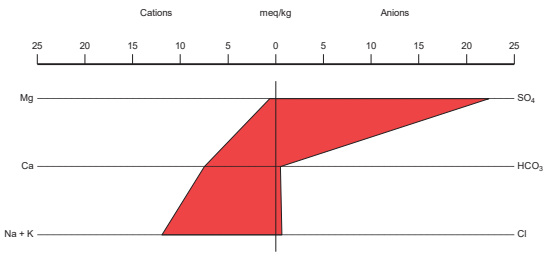

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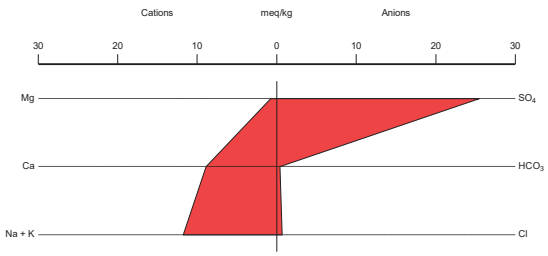

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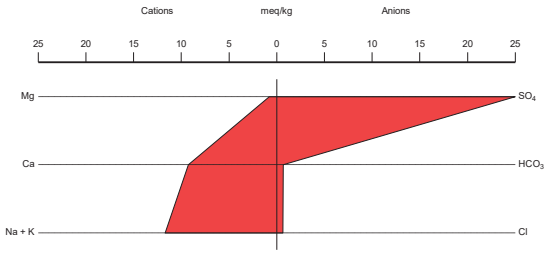

GW-1

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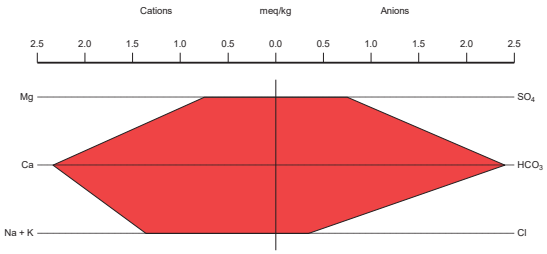

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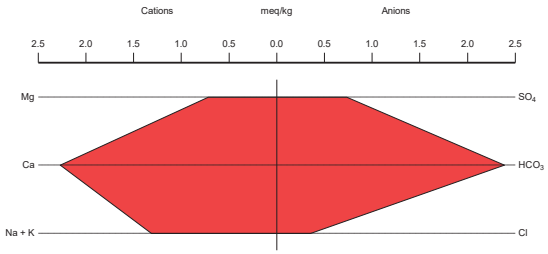

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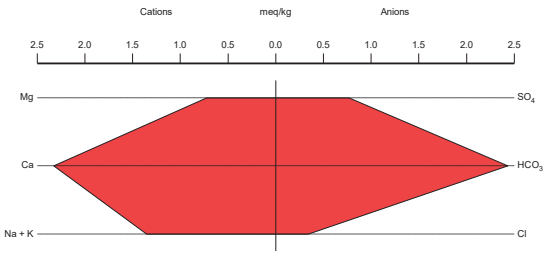

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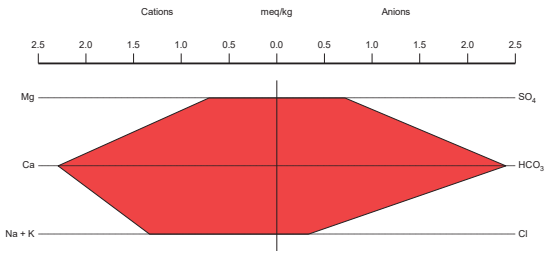

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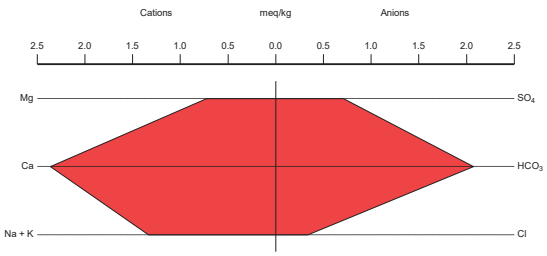

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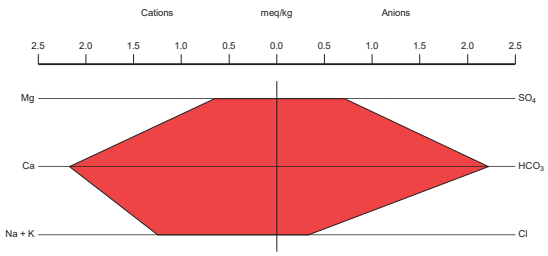

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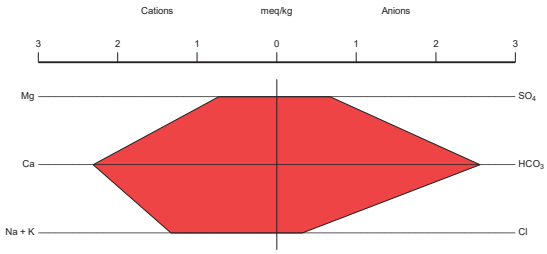

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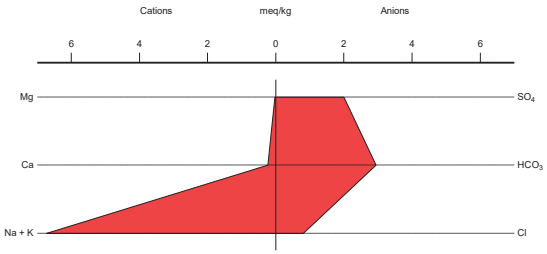

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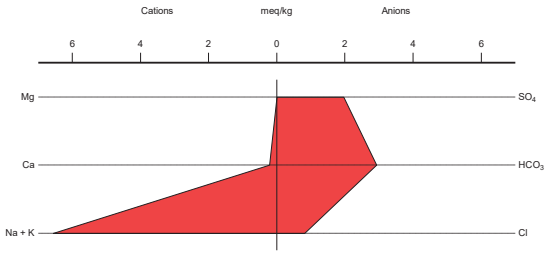

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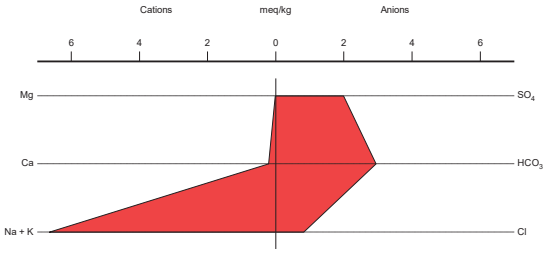

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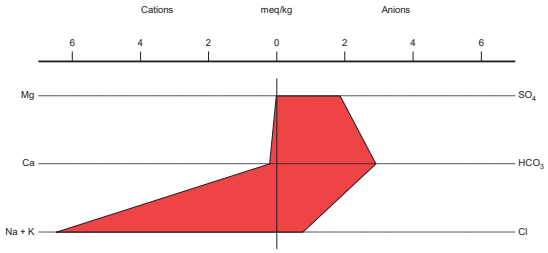

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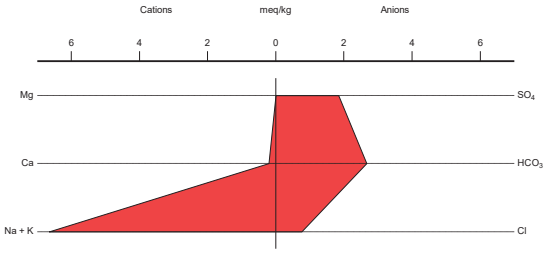

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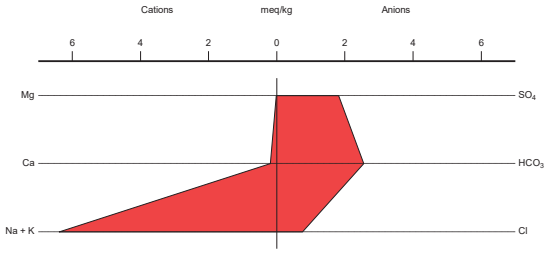

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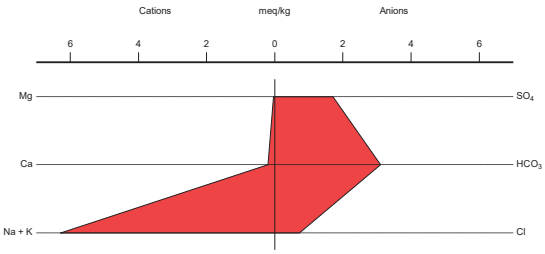

PROD-1

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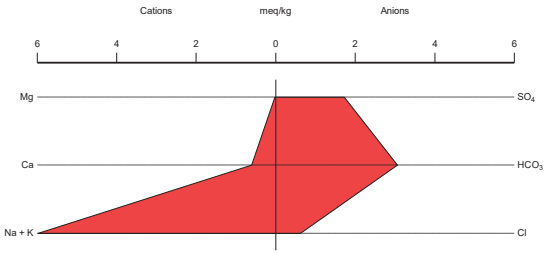

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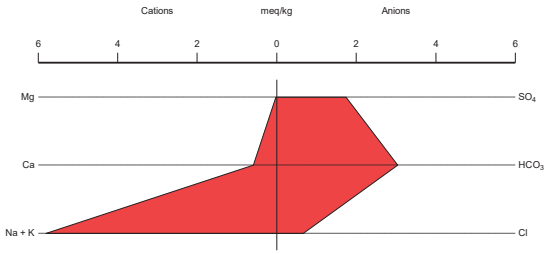

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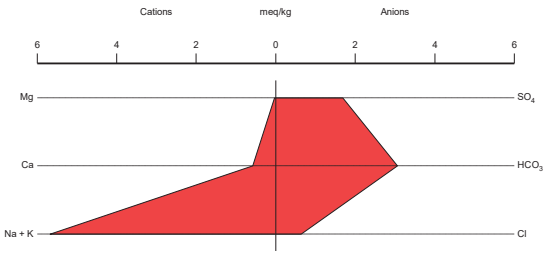

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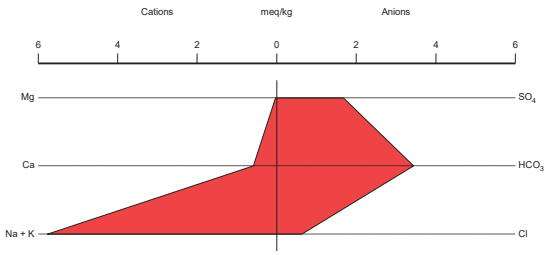

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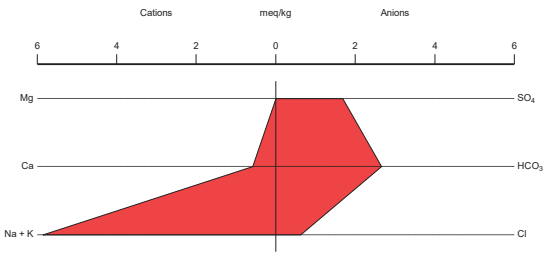

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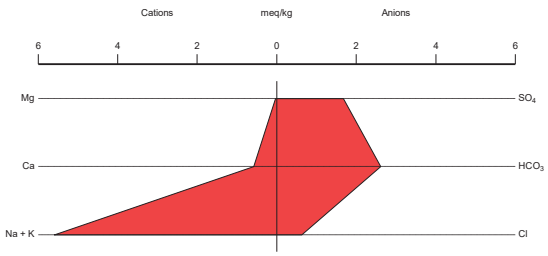

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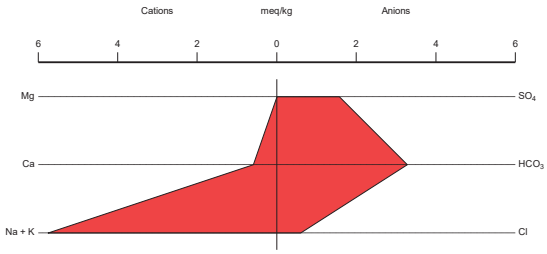

PW-1

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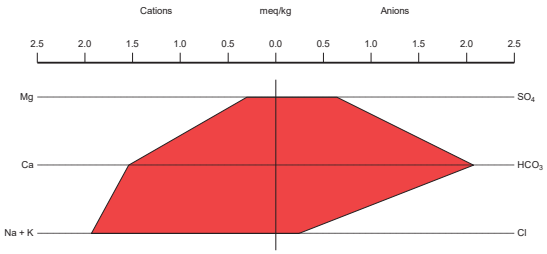

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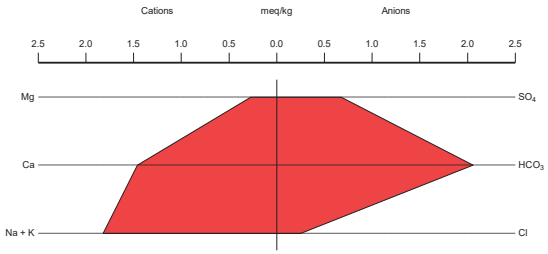

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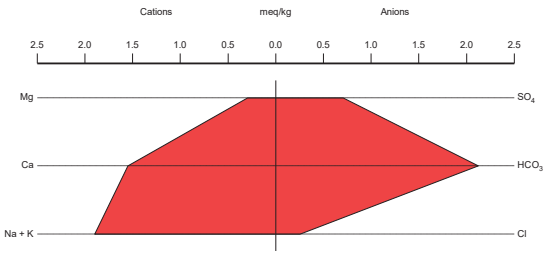

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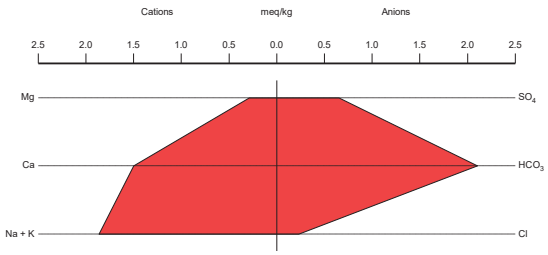

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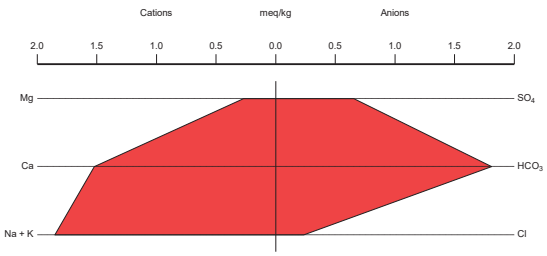

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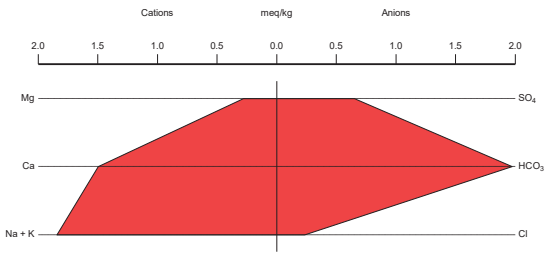
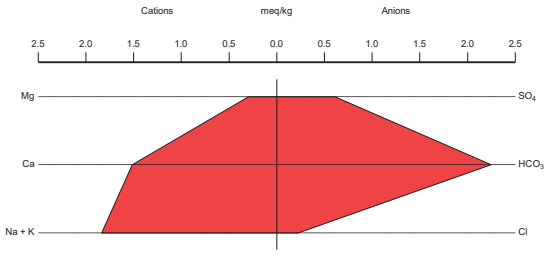
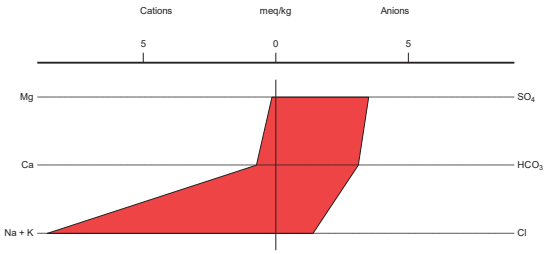


2014 Q3

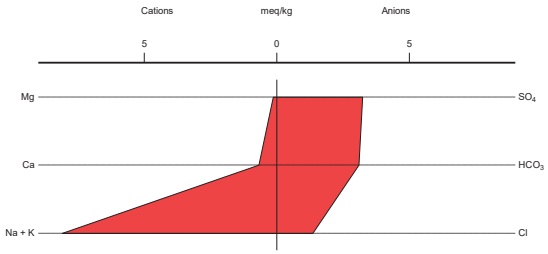


PW-4

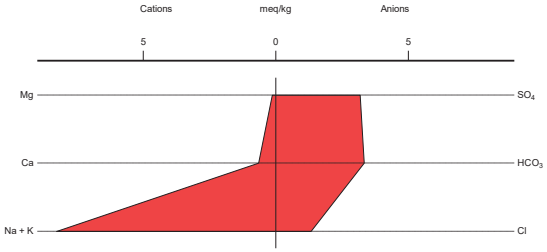
2013 Q1



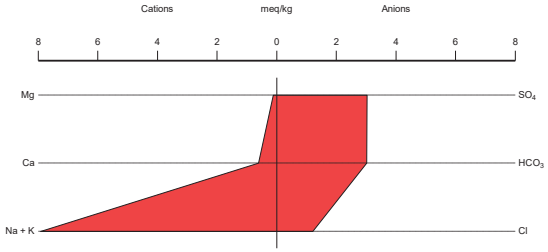
2013 Q2



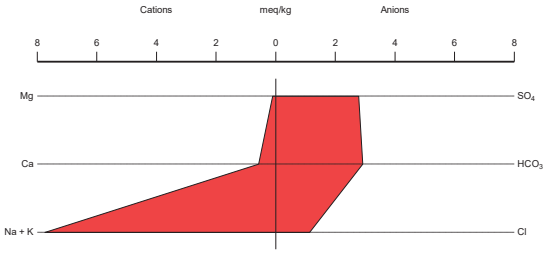
2013 Q3



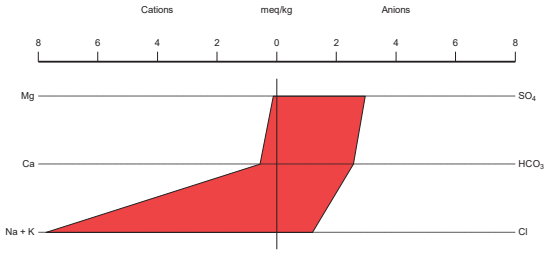
2013 Q4



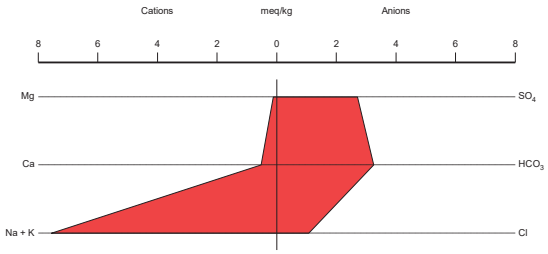
2014 Q1



2014 Q2

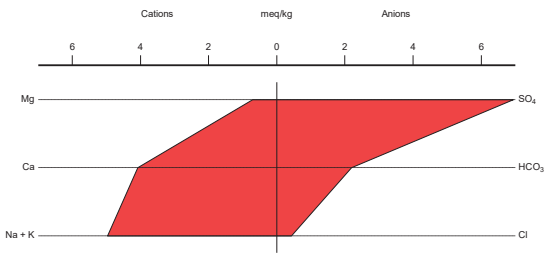


2014 Q3



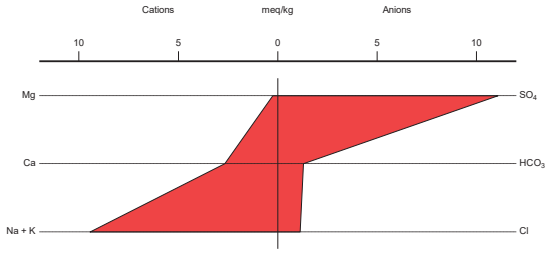
59762

2017 Q4



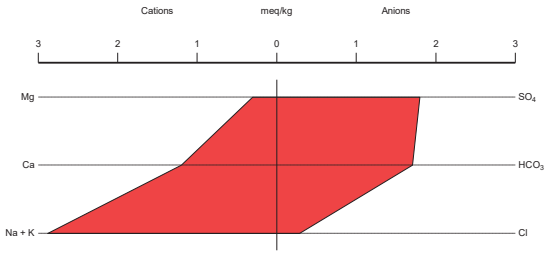
GMW17-32

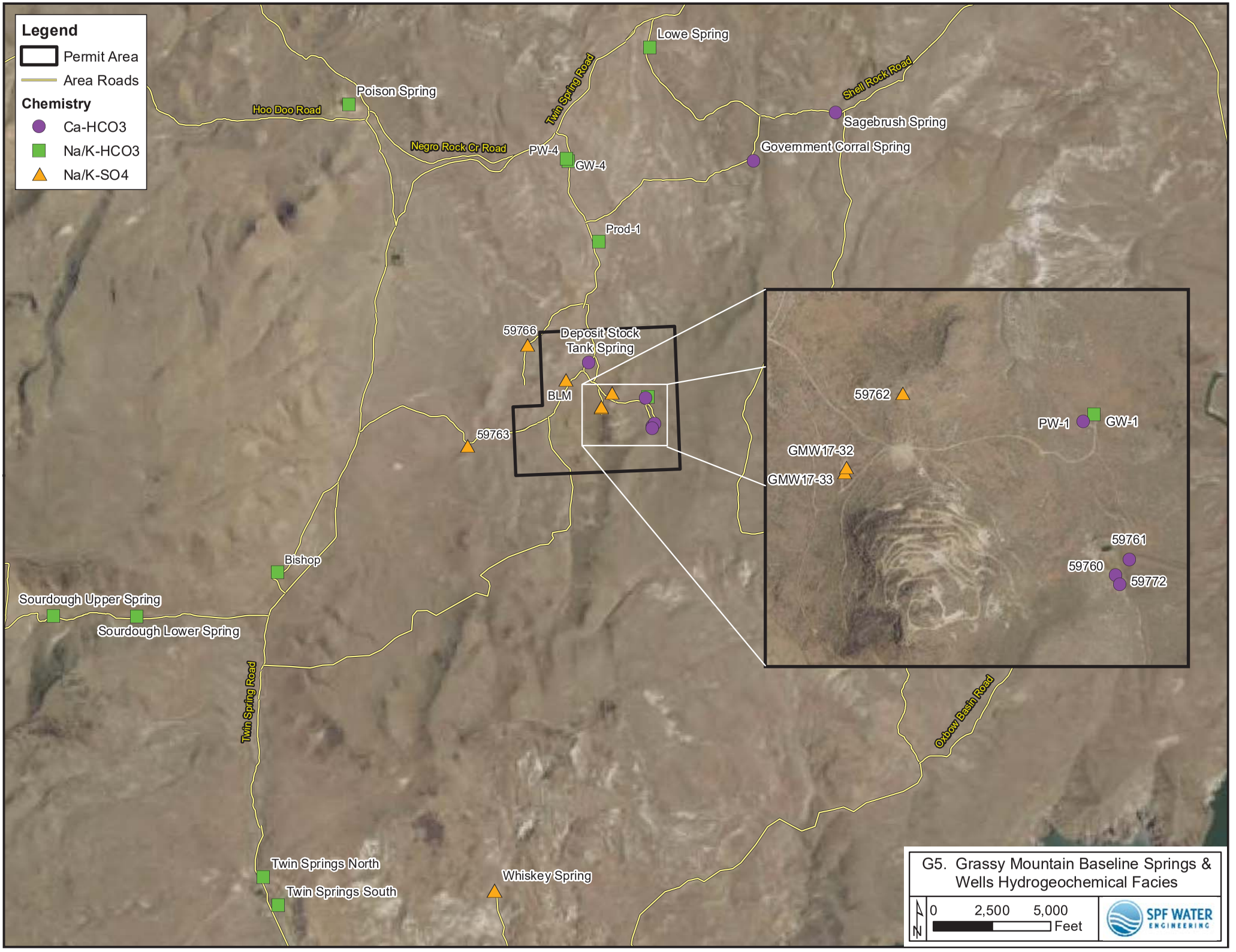
2018 Q4



GMW17-33

2017 Q4




Legend
Permit Area
Area Roads
Chemistry
Ca-HCO3
Na/K-HCO3
Na/K-SO4
Lowe Spring
Poison Spring
Hoo Doo Road
Twin Spring Road
Shell Rock Road
Sagebrush Spring
Government Corral Spring
Negro Rock Cr Road
PW-4
GW-4
Prod-1
59766
Deposit Stock Tank Spring
BLM
59763
59762
PW-1
GW-1
GMW17-32
GMW17-33
59761
59760
59772
Bishop
Sourdough Upper Spring
Sourdough Lower Spring
Twin Spring Road
Oxbow Basin Road
Twin Springs North
Twin Springs South
Whiskey Spring
G5. Grassy Mountain Baseline Springs & Wells Hydrogeochemical Facies
N
0
2,500
5,000
Feet
SPF WATER ENGINEERING

Appendix H
ACZ Laboratory Reports, 2013 - 2018

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

March 29, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11130

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 15, 2013. This project has been assigned to ACZ's project number, L11130. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11130. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 29, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

March 29, 2013

Project ID: Calico Winter Sampling
ACZ Project ID: L11130

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 8 ground water samples from SPF Water Engineering on March 15, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L11130. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L11130-01***
Date Sampled: *03/13/13 09:50*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:13	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/25/13 15:42	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		150			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		3	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		153		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	11.26			mg/L	0.5	2.5	03/21/13 22:09	tcd
Conductivity @25C	SM2510B	393		*	umhos/cm	1	10	03/20/13 19:03	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:32	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 11:28	tcd
Fluoride	M300.0 - Ion Chromatography	0.43	B	*	mg/L	0.1	0.5	03/21/13 22:09	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.06	H		mg/L	0.02	0.1	03/29/13 13:52	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.06	H	*	mg/L	0.02	0.1	03/15/13 20:01	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:01	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		19.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	290			mg/L	10	20	03/19/13 16:17	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:33	abm
Sulfate	M300.0 - Ion Chromatography	16.72			mg/L	0.5	2.5	03/21/13 22:09	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L11130-02***
Date Sampled: *03/13/13 11:00*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:26	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 11:54	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		163			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		2	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		165		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	13.05			mg/L	0.5	2.5	03/21/13 22:30	tcd
Conductivity @25C	SM2510B	422		*	umhos/cm	1	10	03/20/13 19:12	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:33	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:23	tcd
Fluoride	M300.0 - Ion Chromatography	0.44	B	*	mg/L	0.1	0.5	03/21/13 22:30	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.56	H		mg/L	0.02	0.1	03/29/13 13:52	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.56	H	*	mg/L	0.02	0.1	03/15/13 20:02	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:02	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	290			mg/L	10	20	03/19/13 16:18	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:33	abm
Sulfate	M300.0 - Ion Chromatography	21.39			mg/L	0.5	2.5	03/21/13 22:30	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L11130-03***
Date Sampled: *03/13/13 12:15*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:39	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:09	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		317			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		9	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		326		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	55.26			mg/L	0.5	2.5	03/21/13 23:12	tcd
Conductivity @25C	SM2510B	924		*	umhos/cm	1	10	03/20/13 19:22	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:35	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:24	tcd
Fluoride	M300.0 - Ion Chromatography	0.61		*	mg/L	0.1	0.5	03/21/13 23:12	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	9.4	H		mg/L	0.1	0.5	03/29/13 13:52	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	9.4	H	*	mg/L	0.1	0.5	03/15/13 20:11	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:03	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	570			mg/L	10	20	03/19/13 16:19	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:34	abm
Sulfate	M300.0 - Ion Chromatography	61.59			mg/L	0.5	2.5	03/21/13 23:12	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L11130-04***
Date Sampled: *03/13/13 14:40*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:46	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:24	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		163			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		3	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		166		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	8.97			mg/L	0.5	2.5	03/21/13 23:54	tcd
Conductivity @25C	SM2510B	442		*	umhos/cm	1	10	03/20/13 19:31	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:36	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:26	tcd
Fluoride	M300.0 - Ion Chromatography	0.72		*	mg/L	0.1	0.5	03/21/13 23:54	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.02	H		mg/L	0.02	0.1	03/29/13 13:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.02	H	*	mg/L	0.02	0.1	03/15/13 20:04	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:04	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		20.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	310			mg/L	10	20	03/19/13 16:20	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:35	abm
Sulfate	M300.0 - Ion Chromatography	45.33			mg/L	0.5	2.5	03/21/13 23:54	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L11130-05***
Date Sampled: *03/13/13 16:35*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:52	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:31	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		157			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		3	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		160		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	10.85			mg/L	0.5	2.5	03/22/13 0:15	tcd
Conductivity @25C	SM2510B	442		*	umhos/cm	1	10	03/20/13 19:40	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:37	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:27	tcd
Fluoride	M300.0 - Ion Chromatography	0.72		*	mg/L	0.1	0.5	03/22/13 0:15	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.96	H		mg/L	0.02	0.1	03/29/13 13:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.96	H	*	mg/L	0.02	0.1	03/15/13 20:05	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:05	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		19.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	310			mg/L	10	20	03/19/13 16:34	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:36	abm
Sulfate	M300.0 - Ion Chromatography	45.39			mg/L	0.5	2.5	03/22/13 0:15	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH DUPLICATE

ACZ Sample ID: ***L11130-06***
Date Sampled: *03/13/13 16:40*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 16:59	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:39	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		157			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		4	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		161		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	10.86			mg/L	0.5	2.5	03/22/13 0:37	tcd
Conductivity @25C	SM2510B	442		*	umhos/cm	1	10	03/20/13 19:48	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:38	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:28	tcd
Fluoride	M300.0 - Ion Chromatography	0.73		*	mg/L	0.1	0.5	03/22/13 0:37	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.95	H		mg/L	0.02	0.1	03/29/13 13:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.95	H	*	mg/L	0.02	0.1	03/15/13 20:06	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:06	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		19.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	320			mg/L	10	20	03/19/13 16:35	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:37	abm
Sulfate	M300.0 - Ion Chromatography	45.50			mg/L	0.5	2.5	03/22/13 0:37	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L11130-07***
Date Sampled: *03/13/13 14:35*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:06	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:46	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity			U	*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	0.54	B		mg/L	0.5	2.5	03/22/13 1:40	tcd
Conductivity @25C	SM2510B		U	*	umhos/cm	1	10	03/20/13 19:54	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:40	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:29	tcd
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	03/22/13 1:40	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		UH		mg/L	0.02	0.1	03/29/13 13:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	03/15/13 20:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/15/13 20:09	pjb
pH (lab)	SM4500H+ B								
pH		6.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		19.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C		U		mg/L	10	20	03/19/13 16:35	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:38	abm
Sulfate	M300.0 - Ion Chromatography		U		mg/L	0.5	2.5	03/22/13 1:40	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L11130-08***
Date Sampled: *03/13/13 14:30*
Date Received: *03/15/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:12	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 12:54	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity			U	*	mg/L	2	20	03/20/13 0:00	abm
Conductivity @25C	SM2510B		U	*	umhos/cm	1	10	03/20/13 19:59	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:41	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:31	tcd
pH (lab)	SM4500H+ B								
pH		6.1	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		19.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/19/13 15:39	abm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11130***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770PBW1	PBW	03/20/13 15:01				2.9	mg/L		-20	20			
WG340770LCSW2	LCSW	03/20/13 15:14	WC130313-	820		757.2	mg/L	92.3	90	110			
WG340770LCSW5	LCSW	03/20/13 18:30	WC130313-	820		785.6	mg/L	95.8	90	110			
WG340770PBW2	PBW	03/20/13 18:38				U	mg/L		-20	20			
L11130-08DUP	DUP	03/20/13 20:04			U	U	mg/L				0	20	RA
WG340770LCSW8	LCSW	03/20/13 21:51	WC130313-	820		768.6	mg/L	93.7	90	110			
WG340770PBW3	PBW	03/20/13 21:59				3.3	mg/L		-20	20			
WG340770LCSW11	LCSW	03/21/13 1:23	WC130313-	820		781.6	mg/L	95.3	90	110			
WG340770PBW4	PBW	03/21/13 1:31				U	mg/L		-20	20			
WG340770LCSW14	LCSW	03/21/13 5:07	WC130313-	820		798.3	mg/L	97.4	90	110			

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	19.98		20	mg/L	100.1	90	110			
WG340759ICB	ICB	03/20/13 18:20				.52	mg/L		-1.5	1.5			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	30		31.09	mg/L	103.6	90	110			
L10922-03DUP	DUP	03/21/13 17:56			12.13	12.13	mg/L				0	20	
L10992-02AS	AS	03/21/13 18:38	WI121018-8	300	17.6	320.3	mg/L	100.9	90	110			
L11130-02DUP	DUP	03/21/13 22:51			13.05	13.06	mg/L				0.1	20	
L11130-03AS	AS	03/21/13 23:33	WI121018-8	30	55.26	85.69	mg/L	101.4	90	110			
WG340840LFB2	LFB	03/22/13 3:25	WI121018-8	30		31.79	mg/L	106	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW1	LCSW	03/20/13 15:02	PCN41037	1408.8		1436.3	umhos/cm	102	90	110			
WG340770LCSW4	LCSW	03/20/13 18:17	PCN41037	1408.8		1404.9	umhos/cm	99.7	90	110			
L11130-08DUP	DUP	03/20/13 20:04			U	U	umhos/cm				0	20	RA
WG340770LCSW7	LCSW	03/20/13 21:40	PCN41037	1408.8		1391.7	umhos/cm	98.8	90	110			
WG340770LCSW10	LCSW	03/21/13 1:11	PCN41037	1408.8		1378.6	umhos/cm	97.9	90	110			
WG340770LCSW13	LCSW	03/21/13 4:55	PCN41037	1408.8		1364.4	umhos/cm	96.8	90	110			

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341184													
WG341184ICV	ICV	03/27/13 17:28	WI130321-7	.3		.2875	mg/L	95.8	90	110			
WG341184ICB	ICB	03/27/13 17:29				U	mg/L		-0.003	0.003			
WG341109LRB	LRB	03/27/13 17:30				U	mg/L		-0.003	0.003			
WG341109LFB	LFB	03/27/13 17:31	WI130321-3	.2		.1853	mg/L	92.7	90	110			
L11130-01DUP	DUP	03/27/13 17:33			U	U	mg/L				0	20	RA
L11130-02LFM	LFM	03/27/13 17:34	WI130321-3	.2	U	.1886	mg/L	94.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L11130***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341069													
WG341069ICV	ICV	03/26/13 10:36	WI130321-7	.3		.2932	mg/L	97.7	90	110			
WG341069ICB	ICB	03/26/13 10:37				U	mg/L		-0.003	0.003			
WG341072													
WG341013LRB	LRB	03/26/13 11:15				U	mg/L		-0.003	0.003			
WG341013LFB	LFB	03/26/13 11:16	WI130321-5	.2		.191	mg/L	95.5	90	110			
L11119-02DUP	DUP	03/26/13 11:18			U	U	mg/L				0	20	RA
L11119-03LFM	LFM	03/26/13 11:20	WI130321-5	.2	U	.1827	mg/L	91.4	90	110			
WG341107													
WG341107ICV	ICV	03/26/13 15:19	WI130321-7	.3		.2871	mg/L	95.7	90	110			
WG341107ICB	ICB	03/26/13 15:20				U	mg/L		-0.003	0.003			
WG341074LRB	LRB	03/26/13 15:21				U	mg/L		-0.003	0.003			
WG341074LFB	LFB	03/26/13 15:22	WI130321-5	.2		.1904	mg/L	95.2	90	110			
L11130-02DUP	DUP	03/26/13 15:24			U	U	mg/L				0	20	RA
L11130-03LFM	LFM	03/26/13 15:25	WI130321-5	.2	U	.1857	mg/L	92.9	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	4.004		4.26	mg/L	106.4	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-0.3	0.3			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	1.5		1.54	mg/L	102.7	90	110			
L10922-03DUP	DUP	03/21/13 17:56			.3	.31	mg/L				3.3	20	RA
L10992-02AS	AS	03/21/13 18:38	WI121018-8	15	1.5	16.3	mg/L	98.7	90	110			
L11130-02DUP	DUP	03/21/13 22:51			.44	.45	mg/L				2.2	20	RA
L11130-03AS	AS	03/21/13 23:33	WI121018-8	1.5	.61	2.19	mg/L	105.3	90	110			
WG340840LFB2	LFB	03/22/13 15:34	WI121018-8	1.5		1.53	mg/L	102	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340556													
WG340556ICV	ICV	03/15/13 19:44	WI130110-1	2.416		2.425	mg/L	100.4	90	110			
WG340556ICB	ICB	03/15/13 19:45				U	mg/L		-0.06	0.06			
WG340556LFB	LFB	03/15/13 19:49	WI130215-3	2		1.946	mg/L	97.3	90	110			
L11126-01AS	AS	03/15/13 19:51	WI130215-3	2	.48	2.438	mg/L	97.9	90	110			
L11126-02DUP	DUP	03/15/13 19:54			.56	.561	mg/L				0.2	20	
L11130-06AS	AS	03/15/13 20:08	WI130215-3	2	1.95	3.83	mg/L	94	90	110			
L11130-07DUP	DUP	03/15/13 20:10			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L11130***

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340556													
WG340556ICV	ICV	03/15/13 19:44	WI130110-1	.609		.597	mg/L	98	90	110			
WG340556ICB	ICB	03/15/13 19:45				U	mg/L		-0.03	0.03			
WG340556LFB	LFB	03/15/13 19:49	WI130215-3	1		1	mg/L	100	90	110			
L11126-01AS	AS	03/15/13 19:51	WI130215-3	1	.04	1.05	mg/L	101	90	110			
L11126-02DUP	DUP	03/15/13 19:54			.04	.042	mg/L				4.9	20	RA
L11130-06AS	AS	03/15/13 20:08	WI130215-3	1	U	1.015	mg/L	101.5	90	110			
L11130-07DUP	DUP	03/15/13 20:10			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW3	LCSW	03/20/13 15:17	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW6	LCSW	03/20/13 18:33	PCN40853	6		6.02	units	100.3	98	102			
L11130-08DUP	DUP	03/20/13 20:04			6.1	6.06	units				0.7	20	
WG340770LCSW9	LCSW	03/20/13 21:54	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW12	LCSW	03/21/13 1:26	PCN40853	6		6.01	units	100.2	98	102			
WG340770LCSW15	LCSW	03/21/13 5:10	PCN40853	6		6.01	units	100.2	98	102			

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340702													
WG340702PBW	PBW	03/19/13 16:01				U	mg/L		-20	20			
WG340702LCSW	LCSW	03/19/13 16:01	PCN40252	260		250	mg/L	96.2	80	120			
WG340703													
WG340703PBW	PBW	03/19/13 16:22				U	mg/L		-20	20			
WG340703LCSW	LCSW	03/19/13 16:22	PCN40252	260		244	mg/L	93.8	80	120			
L11149-01DUP	DUP	03/19/13 16:41			150	152	mg/L				1.3	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340706													
WG340706PBW	PBW	03/19/13 15:20				U	mg/L		-15	15			
WG340706LCSW	LCSW	03/19/13 15:20	PCN40252	160		147	mg/L	91.9	80	120			
L11130-08DUP	DUP	03/19/13 15:39			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L11130***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	50		52.23	mg/L	104.5	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-1.5	1.5			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	30		30.01	mg/L	100	90	110			
L10922-03DUP	DUP	03/21/13 17:56			24.38	23.5	mg/L				3.7	20	
L10992-02AS	AS	03/21/13 18:38	WI121018-8	300	477	791.4	mg/L	104.8	90	110			
L11130-02DUP	DUP	03/21/13 22:51			21.39	21.42	mg/L				0.1	20	
L11130-03AS	AS	03/21/13 23:33	WI121018-8	30	61.59	91.27	mg/L	98.9	90	110			
WG340840LFB2	LFB	03/22/13 3:25	WI121018-8	30		29.72	mg/L	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L11130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11130-01	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11130-02	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L11130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11130-03	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11130-04	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L11130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11130-05	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11130-06	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L11130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11130-07	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340556	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11130-08	WG340770	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340706	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L11130***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11130
Date Received: 03/15/2013 08:57
Received By: ksj
Date Printed: 3/15/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the sample identification and remarks section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3842	4.1	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L11130

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN OF CUSTODY

Name: Erik Boe	Address: 300 E. Mallard Dr, ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: (208) 383-4140

Name:	E-mail:
Company:	Telephone:

Name: SAME AS ABOVE	Address: SAME AS ABOVE
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code: 83706 Time Zone: mtn

Quote #: SHORT-HOLDS-WETCHEM

Project/PO #: Calico Winter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

Sample ID	Date	Time	Matrix	# of Containers	Quote # SHORT-HOLDS-WETCHEM (see list attached)		SHORT-HOLDS-WETCHEM with * exception (see REMARKS)				
Sagebrush Spring	3/13/13	9:50		3	X						
Government Corral Spring	3/13/13	11:00		3	X						
Lowe Spring	3/13/13	12:15		3	X						
Twin Springs North	3/13/13	14:40		3	X						
Twin Springs South	3/13/13	16:35		3	X						
Twin Spring South Duplicate	3/13/13	16:40		3	X						
Equipment Blank	3/13/13	14:35		3	X						
Transfer Blank	3/13/13	14:30		2			X				

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*With regards to the Transfer Blank, we do not want it here wet chemistry completed on it, the corresponding bottle is empty.

- see attach list for ~~X~~ SHORT-HOLDS-WETCHEM parameters.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Erik Boe	3/14/13 10:00	[illegible]	3.15.13 8:5[illegible]

L11130 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

March 29, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11147

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 16, 2013. This project has been assigned to ACZ's project number, L11147. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11147. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 29, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

March 29, 2013

Project ID: Calico Winter Sampling
ACZ Project ID: L11147

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on March 16, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L11147. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-1

ACZ Sample ID: ***L11147-01***
Date Sampled: *03/14/13 18:00*
Date Received: *03/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:25	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 13:01	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		146			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		5	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		151			mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	12.13			mg/L	0.5	2.5	03/22/13 2:01	tcd
Conductivity @25C	SM2510B	414			umhos/cm	1	10	03/20/13 22:49	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:43	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:32	tcd
Fluoride	M300.0 - Ion Chromatography	0.53		*	mg/L	0.1	0.5	03/22/13 2:01	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.25	H		mg/L	0.04	0.2	03/29/13 14:02	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.25	H	*	mg/L	0.04	0.2	03/19/13 20:25	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 19:54	mpb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		20.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	300			mg/L	10	20	03/19/13 16:37	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/20/13 15:01	khw
Sulfate	M300.0 - Ion Chromatography	35.82			mg/L	0.5	2.5	03/22/13 2:01	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59766

ACZ Sample ID: ***L11147-02***
Date Sampled: *03/14/13 16:34*
Date Received: *03/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:32	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 13:08	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		96			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		96		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	12.43			mg/L	0.5	2.5	03/22/13 2:22	tcd
Conductivity @25C	SM2510B	883		*	umhos/cm	1	10	03/20/13 22:57	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:43	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:33	tcd
Fluoride	M300.0 - Ion Chromatography	2.05		*	mg/L	0.1	0.5	03/22/13 2:22	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.07	BH		mg/L	0.02	0.1	03/29/13 14:02	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.07	BH	*	mg/L	0.02	0.1	03/19/13 19:56	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 19:56	mpb
pH (lab)	SM4500H+ B								
pH		8.0	H	*	units	0.1	0.1	03/20/13 0:00	abm
pH measured at		20.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	660			mg/L	10	20	03/19/13 16:38	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D	880		*	mg/L	50	200	03/20/13 15:03	khw
Sulfate	M300.0 - Ion Chromatography	308.57			mg/L	2.5	12.5	03/22/13 14:52	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-4

ACZ Sample ID: ***L11147-03***
Date Sampled: *03/14/13 14:25*
Date Received: *03/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:45	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 13:16	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		179			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		16	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		195			mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	28.50			mg/L	0.5	2.5	03/22/13 2:43	tcd
Conductivity @25C	SM2510B	673			umhos/cm	1	10	03/20/13 23:06	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:45	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:34	tcd
Fluoride	M300.0 - Ion Chromatography	2.47		*	mg/L	0.1	0.5	03/22/13 2:43	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		UH		mg/L	0.02	0.1	03/29/13 14:03	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	03/19/13 19:58	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 19:58	mpb
pH (lab)	SM4500H+ B								
pH		8.7	H		units	0.1	0.1	03/20/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	420			mg/L	10	20	03/19/13 16:39	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D	46		*	mg/L	5	20	03/20/13 15:05	khw
Sulfate	M300.0 - Ion Chromatography	95.81			mg/L	0.5	2.5	03/22/13 2:43	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-4

ACZ Sample ID: ***L11147-04***
Date Sampled: *03/14/13 12:40*
Date Received: *03/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/13 17:58	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/13 13:23	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		189			mg/L	2	20	03/20/13 0:00	abm
Carbonate as CaCO3		11	B		mg/L	2	20	03/20/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/20/13 0:00	abm
Total Alkalinity		200		*	mg/L	2	20	03/20/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	49.25			mg/L	0.5	2.5	03/22/13 3:04	tcd
Conductivity @25C	SM2510B	904		*	umhos/cm	1	10	03/20/13 23:15	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 17:47	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/26/13 15:35	tcd
Fluoride	M300.0 - Ion Chromatography	2.37		*	mg/L	0.1	0.5	03/22/13 3:04	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		UH		mg/L	0.02	0.1	03/29/13 14:03	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	03/19/13 20:00	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 20:00	mpb
pH (lab)	SM4500H+ B								
pH		8.6	H	*	units	0.1	0.1	03/20/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/20/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	570			mg/L	10	20	03/19/13 16:40	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D	250		*	mg/L	50	200	03/20/13 15:06	khw
Sulfate	M300.0 - Ion Chromatography	167.70			mg/L	2.5	12.5	03/22/13 15:13	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11147***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770PBW1	PBW	03/20/13 15:01				2.9	mg/L		-20	20			
WG340770LCSW2	LCSW	03/20/13 15:14	WC130313-	820		757.2	mg/L	92.3	90	110			
WG340770LCSW5	LCSW	03/20/13 18:30	WC130313-	820		785.6	mg/L	95.8	90	110			
WG340770PBW2	PBW	03/20/13 18:38				U	mg/L		-20	20			
WG340770LCSW8	LCSW	03/20/13 21:51	WC130313-	820		768.6	mg/L	93.7	90	110			
WG340770PBW3	PBW	03/20/13 21:59				3.3	mg/L		-20	20			
L11149-01DUP	DUP	03/20/13 23:36			104	85.9	mg/L				19.1	20	
WG340770LCSW11	LCSW	03/21/13 1:23	WC130313-	820		781.6	mg/L	95.3	90	110			
WG340770PBW4	PBW	03/21/13 1:31				U	mg/L		-20	20			
WG340770LCSW14	LCSW	03/21/13 5:07	WC130313-	820		798.3	mg/L	97.4	90	110			

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	19.98		20	mg/L	100.1	90	110			
WG340759ICB	ICB	03/20/13 18:20				.52	mg/L		-1.5	1.5			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	30		31.09	mg/L	103.6	90	110			
L11130-02DUP	DUP	03/21/13 22:51			13.05	13.06	mg/L				0.1	20	
L11130-03AS	AS	03/21/13 23:33	WI121018-8	30	55.26	85.69	mg/L	101.4	90	110			
WG340840LFB2	LFB	03/22/13 3:25	WI121018-8	30		31.79	mg/L	106	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW1	LCSW	03/20/13 15:02	PCN41037	1408.8		1436.3	umhos/cm	102	90	110			
WG340770LCSW4	LCSW	03/20/13 18:17	PCN41037	1408.8		1404.9	umhos/cm	99.7	90	110			
WG340770LCSW7	LCSW	03/20/13 21:40	PCN41037	1408.8		1391.7	umhos/cm	98.8	90	110			
L11149-01DUP	DUP	03/20/13 23:36			225	227	umhos/cm				0.9	20	
WG340770LCSW10	LCSW	03/21/13 1:11	PCN41037	1408.8		1378.6	umhos/cm	97.9	90	110			
WG340770LCSW13	LCSW	03/21/13 4:55	PCN41037	1408.8		1364.4	umhos/cm	96.8	90	110			

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341184													
WG341184ICV	ICV	03/27/13 17:28	WI130321-7	.3		.2875	mg/L	95.8	90	110			
WG341184ICB	ICB	03/27/13 17:29				U	mg/L		-0.003	0.003			
WG341109LRB	LRB	03/27/13 17:30				U	mg/L		-0.003	0.003			
WG341109LFB	LFB	03/27/13 17:31	WI130321-3	.2		.1853	mg/L	92.7	90	110			
L11130-01DUP	DUP	03/27/13 17:33			U	U	mg/L				0	20	RA
L11130-02LFM	LFM	03/27/13 17:34	WI130321-3	.2	U	.1886	mg/L	94.3	90	110			
L11147-02DUP	DUP	03/27/13 17:44			U	U	mg/L				0	20	RA
L11147-03LFM	LFM	03/27/13 17:46	WI130321-3	.2	U	.1703	mg/L	85.2	90	110			M2

SPF Water Engineering

ACZ Project ID: ***L11147***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341107													
WG341107ICV	ICV	03/26/13 15:19	WI130321-7	.3		.2871	mg/L	95.7	90	110			
WG341107ICB	ICB	03/26/13 15:20				U	mg/L		-0.003	0.003			
WG341074LRB	LRB	03/26/13 15:21				U	mg/L		-0.003	0.003			
WG341074LFB	LFB	03/26/13 15:22	WI130321-5	.2		.1904	mg/L	95.2	90	110			
L11130-02DUP	DUP	03/26/13 15:24			U	U	mg/L				0	20	RA
L11130-03LFM	LFM	03/26/13 15:25	WI130321-5	.2	U	.1857	mg/L	92.9	90	110			
L11147-04DUP	DUP	03/26/13 15:36			U	U	mg/L				0	20	RA
L11180-01LFM	LFM	03/26/13 15:38	WI130321-5	.2	U	.1858	mg/L	92.9	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	4.004		4.26	mg/L	106.4	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-0.3	0.3			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	1.5		1.54	mg/L	102.7	90	110			
L11130-02DUP	DUP	03/21/13 22:51			.44	.45	mg/L				2.2	20	RA
L11130-03AS	AS	03/21/13 23:33	WI121018-8	1.5	.61	2.19	mg/L	105.3	90	110			
WG340840LFB2	LFB	03/22/13 15:34	WI121018-8	1.5		1.53	mg/L	102	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340719													
WG340719ICV	ICV	03/19/13 19:48	WI130110-1	2.416		2.498	mg/L	103.4	90	110			
WG340719ICB	ICB	03/19/13 19:49				U	mg/L		-0.06	0.06			
WG340719LFB	LFB	03/19/13 19:53	WI130215-3	2		1.941	mg/L	97.1	90	110			
L11147-02DUP	DUP	03/19/13 19:57			.07	.066	mg/L				5.9	20	RA
L11147-01AS	AS	03/19/13 20:27	WI130215-3	4	2.25	6.126	mg/L	96.9	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340719													
WG340719ICV	ICV	03/19/13 19:48	WI130110-1	.609		.584	mg/L	95.9	90	110			
WG340719ICB	ICB	03/19/13 19:49				U	mg/L		-0.03	0.03			
WG340719LFB	LFB	03/19/13 19:53	WI130215-3	1		.978	mg/L	97.8	90	110			
L11147-01AS	AS	03/19/13 19:55	WI130215-3	1	U	.982	mg/L	98.2	90	110			
L11147-02DUP	DUP	03/19/13 19:57			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L11147***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW3	LCSW	03/20/13 15:17	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW6	LCSW	03/20/13 18:33	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW9	LCSW	03/20/13 21:54	PCN40853	6		6.02	units	100.3	98	102			
L11149-01DUP	DUP	03/20/13 23:36			9.2	9.21	units				0.1	20	
WG340770LCSW12	LCSW	03/21/13 1:26	PCN40853	6		6.01	units	100.2	98	102			
WG340770LCSW15	LCSW	03/21/13 5:10	PCN40853	6		6.01	units	100.2	98	102			

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340703													
WG340703PBW	PBW	03/19/13 16:22				U	mg/L		-20	20			
WG340703LCSW	LCSW	03/19/13 16:22	PCN40252	260		244	mg/L	93.8	80	120			
L11149-01DUP	DUP	03/19/13 16:41			150	152	mg/L				1.3	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340772													
WG340772PBW	PBW	03/20/13 14:37				U	mg/L		-15	15			
WG340772LCSW	LCSW	03/20/13 14:38	PCN40252	160		147	mg/L	91.9	80	120			
L11168-01DUP	DUP	03/20/13 15:14			U	5	mg/L				200	20	RA

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	50		52.23	mg/L	104.5	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-1.5	1.5			
WG340840													
WG340840LFB1	LFB	03/21/13 17:13	WI121018-8	30		30.01	mg/L	100	90	110			
L11130-02DUP	DUP	03/21/13 22:51			21.39	21.42	mg/L				0.1	20	
L11130-03AS	AS	03/21/13 23:33	WI121018-8	30	61.59	91.27	mg/L	98.9	90	110			
WG340840LFB2	LFB	03/22/13 3:25	WI121018-8	30		29.72	mg/L	99.1	90	110			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L11147***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11147-01	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340772	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11147-02	WG340770	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG340772	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering ACZ Project ID: ***L11147***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11147-03	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340772	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11147-04	WG340770	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG341184	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341107	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340840	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG340772	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340770	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L11147***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11147
Date Received: 03/16/2013 10:39
Received By: ksj
Date Printed: 3/18/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3352	3.2	12	N/A

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L11147

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Name: Erik Boe	Address: 300 E. Mallard Dr Ste 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: eboe@spfwater.com	Telephone: (208) 383-4140

Name:	E-mail:
Company:	Telephone:

Name: SAME AS ABOVE	Address: SAME AS ABOVE
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thompson Sampler's site Information State: ID Zip code: 83706 Time Zone: Mtn

Quote #: SHORT-HOLDS-WETCHEM

Project/PO #: Calico Winter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

			# of Containers	Quote # SHORT-HOLDS-WETCHEM (see list attached)						
GW-1	3/14/13	10:00	3	X						
59766	3/14/13	16:34	3	X						
GW-4	3/14/13	14:25	3	X						
PW-4	3/14/13	12:40	3	X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

- See attached list for SHORT-HOLDS-WETCHEM parameters.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

Erik Boe	3/15/13 10:00	[signature] 3/16/13	1039

L11147 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 01, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11164

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 19, 2013. This project has been assigned to ACZ's project number, L11164. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11164. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 01, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SOURDOUGH SPRINGS UPPER

ACZ Sample ID: ***L11164-01***
Date Sampled: *03/17/13 11:50*
Date Received: *03/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/29/13 11:31	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/27/13 13:38	lhb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		153			mg/L	2	20	03/21/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	03/21/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/21/13 0:00	abm
Total Alkalinity		153			mg/L	2	20	03/21/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	14.83		*	mg/L	0.5	2.5	03/26/13 13:25	tcd
Conductivity @25C	SM2510B	425			umhos/cm	1	10	03/21/13 3:07	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 21:06	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 19:31	tcd
Fluoride	M300.0 - Ion Chromatography	0.52		*	mg/L	0.1	0.5	03/26/13 13:25	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.08	BH		mg/L	0.02	0.1	04/01/13 10:19	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.08	BH	*	mg/L	0.02	0.1	03/19/13 20:18	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 20:18	mpb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	03/21/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/21/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	310			mg/L	10	20	03/20/13 16:56	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 10:54	khw
Sulfate	M300.0 - Ion Chromatography	38.18			mg/L	0.5	2.5	03/26/13 13:25	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PROD-1

ACZ Sample ID: ***L11164-02***
Date Sampled: *03/17/13 13:40*
Date Received: *03/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/29/13 11:31	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/27/13 13:45	lhb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		186			mg/L	2	20	03/21/13 0:00	abm
Carbonate as CaCO3		11	B		mg/L	2	20	03/21/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/21/13 0:00	abm
Total Alkalinity		197			mg/L	2	20	03/21/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	21.86			mg/L	0.5	2.5	03/26/13 14:08	tcd
Conductivity @25C	SM2510B	628			umhos/cm	1	10	03/21/13 3:25	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 21:07	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 19:34	tcd
Fluoride	M300.0 - Ion Chromatography	1.16			mg/L	0.1	0.5	03/26/13 14:08	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		UH		mg/L	0.02	0.1	04/01/13 10:19	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	03/19/13 20:20	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 20:20	mpb
pH (lab)	SM4500H+ B								
pH		8.5	H		units	0.1	0.1	03/21/13 0:00	abm
pH measured at		22.0			C	0.1	0.1	03/21/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	380			mg/L	10	20	03/20/13 16:57	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 10:57	khw
Sulfate	M300.0 - Ion Chromatography	82.55			mg/L	0.5	2.5	03/26/13 14:08	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L11164-03***
Date Sampled: *03/17/13 14:30*
Date Received: *03/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/29/13 11:31	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/27/13 13:52	lhb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		188			mg/L	2	20	03/21/13 0:00	abm
Carbonate as CaCO3		3	B		mg/L	2	20	03/21/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/21/13 0:00	abm
Total Alkalinity		191			mg/L	2	20	03/21/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	14.89			mg/L	0.5	2.5	03/26/13 14:50	tcd
Conductivity @25C	SM2510B	496			umhos/cm	1	10	03/21/13 3:34	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 21:08	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 19:35	tcd
Fluoride	M300.0 - Ion Chromatography	0.51			mg/L	0.1	0.5	03/26/13 14:50	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.05	BH		mg/L	0.02	0.1	04/01/13 10:19	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.05	BH	*	mg/L	0.02	0.1	03/19/13 20:21	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/19/13 20:21	mpb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/21/13 0:00	abm
pH measured at		21.0			C	0.1	0.1	03/21/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	340			mg/L	10	20	03/20/13 16:58	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 10:59	khw
Sulfate	M300.0 - Ion Chromatography	42.70			mg/L	0.5	2.5	03/26/13 14:50	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: WHISKEY SPRINGS

ACZ Sample ID: ***L11164-04***
Date Sampled: *03/17/13 16:30*
Date Received: *03/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/29/13 11:32	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/27/13 13:59	lhb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		130			mg/L	2	20	03/21/13 0:00	abm
Carbonate as CaCO3		4	B		mg/L	2	20	03/21/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	03/21/13 0:00	abm
Total Alkalinity		134			mg/L	2	20	03/21/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	6.33			mg/L	0.5	2.5	03/26/13 16:14	tcd
Conductivity @25C	SM2510B	540			umhos/cm	1	10	03/21/13 3:43	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 21:11	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/27/13 19:35	tcd
Fluoride	M300.0 - Ion Chromatography	0.79			mg/L	0.1	0.5	03/26/13 16:14	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.21	H		mg/L	0.02	0.1	04/01/13 10:19	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.22	H	*	mg/L	0.02	0.1	03/19/13 20:22	mpb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.01	BH	*	mg/L	0.01	0.05	03/19/13 20:22	mpb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/21/13 0:00	abm
pH measured at		20.0			C	0.1	0.1	03/21/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	400			mg/L	10	20	03/20/13 16:59	ljr
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 11:02	khw
Sulfate	M300.0 - Ion Chromatography	128.08			mg/L	1	5	03/27/13 16:45	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11164***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770PBW1	PBW	03/20/13 15:01				2.9	mg/L		-20	20			
WG340770LCSW2	LCSW	03/20/13 15:14	WC130313-	820		757.2	mg/L	92.3	90	110			
WG340770LCSW5	LCSW	03/20/13 18:30	WC130313-	820		785.6	mg/L	95.8	90	110			
WG340770PBW2	PBW	03/20/13 18:38				U	mg/L		-20	20			
WG340770LCSW8	LCSW	03/20/13 21:51	WC130313-	820		768.6	mg/L	93.7	90	110			
WG340770PBW3	PBW	03/20/13 21:59				3.3	mg/L		-20	20			
WG340770LCSW11	LCSW	03/21/13 1:23	WC130313-	820		781.6	mg/L	95.3	90	110			
WG340770PBW4	PBW	03/21/13 1:31				U	mg/L		-20	20			
L11164-01DUP	DUP	03/21/13 3:16			153	171.7	mg/L				11.5	20	
L11183-01DUP	DUP	03/21/13 4:53			38	37.1	mg/L				2.4	20	
WG340770LCSW14	LCSW	03/21/13 5:07	WC130313-	820		798.3	mg/L	97.4	90	110			

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	19.98		20	mg/L	100.1	90	110			
WG340759ICB	ICB	03/20/13 18:20				.52	mg/L		-1.5	1.5			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	30		30.79	mg/L	102.6	90	110			
L11156-05DUP	DUP	03/26/13 9:12			6.8	6.9	mg/L				1.5	20	RA
L11156-06AS	AS	03/26/13 9:54	WI121018-8	3000	75	3070	mg/L	99.8	90	110			
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	30		30.37	mg/L	101.2	90	110			
L11164-02DUP	DUP	03/26/13 14:29			21.86	21.86	mg/L				0	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	30	14.89	45.62	mg/L	102.4	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW1	LCSW	03/20/13 15:02	PCN41037	1408.8		1436.3	umhos/cm	102	90	110			
WG340770LCSW4	LCSW	03/20/13 18:17	PCN41037	1408.8		1404.9	umhos/cm	99.7	90	110			
WG340770LCSW7	LCSW	03/20/13 21:40	PCN41037	1408.8		1391.7	umhos/cm	98.8	90	110			
WG340770LCSW10	LCSW	03/21/13 1:11	PCN41037	1408.8		1378.6	umhos/cm	97.9	90	110			
L11164-01DUP	DUP	03/21/13 3:16			425	421	umhos/cm				0.9	20	
L11183-01DUP	DUP	03/21/13 4:53			119	117.5	umhos/cm				1.3	20	
WG340770LCSW13	LCSW	03/21/13 4:55	PCN41037	1408.8		1364.4	umhos/cm	96.8	90	110			

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341311													
WG341311ICV	ICV	03/29/13 20:58	WI130321-7	.3		.2882	mg/L	96.1	90	110			
WG341311ICB	ICB	03/29/13 20:59				U	mg/L		-0.003	0.003			
WG341286LRB	LRB	03/29/13 21:00				U	mg/L		-0.003	0.003			
WG341286LFB	LFB	03/29/13 21:01	WI130321-3	.2		.1952	mg/L	97.6	90	110			
L11154-01DUP	DUP	03/29/13 21:27			1.71	1.766	mg/L				3.2	20	
L11154-02LFM	LFM	03/29/13 21:29	WI130321-3	.2	7.01	7.293	mg/L	141.5	90	110			M3

SPF Water Engineering

ACZ Project ID: ***L11164***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341184													
WG341184ICV	ICV	03/27/13 17:28	WI130321-7	.3		.2875	mg/L	95.8	90	110			
WG341184ICB	ICB	03/27/13 17:29				U	mg/L		-0.003	0.003			
WG341186													
WG341159LRB	LRB	03/27/13 19:23				U	mg/L		-0.003	0.003			
WG341159LFB	LFB	03/27/13 19:24	WI130321-5	.2		.1846	mg/L	92.3	90	110			
L11154-01DUP	DUP	03/27/13 19:26			.144	.1325	mg/L				8.3	20	
L11154-02LFM	LFM	03/27/13 19:50	WI130321-5	.2	.56	.723	mg/L	81.5	90	110			M2

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	4.004		4.26	mg/L	106.4	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-0.3	0.3			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	1.5		1.6	mg/L	106.7	90	110			
L11156-05DUP	DUP	03/26/13 9:12			U	U	mg/L				0	20	RA
L11156-06AS	AS	03/26/13 9:54	WI121018-8	150	U	169	mg/L	112.7	90	110			M1
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	1.5		1.57	mg/L	104.7	90	110			
L11164-02DUP	DUP	03/26/13 14:29			1.16	1.15	mg/L				0.9	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	1.5	.51	2.04	mg/L	102	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340719													
WG340719ICV	ICV	03/19/13 19:48	WI130110-1	2.416		2.498	mg/L	103.4	90	110			
WG340719ICB	ICB	03/19/13 19:49				U	mg/L		-0.06	0.06			
WG340719LFB	LFB	03/19/13 19:53	WI130215-3	2		1.941	mg/L	97.1	90	110			
L11163-04DUP	DUP	03/19/13 20:36			19.9	20.37	mg/L				2.3	20	
L11163-03AS	AS	03/19/13 20:52	WI130215-3	50	44.5	92.11	mg/L	95.2	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340719													
WG340719ICV	ICV	03/19/13 19:48	WI130110-1	.609		.584	mg/L	95.9	90	110			
WG340719ICB	ICB	03/19/13 19:49				U	mg/L		-0.03	0.03			
WG340719LFB	LFB	03/19/13 19:53	WI130215-3	1		.978	mg/L	97.8	90	110			
L11163-03AS	AS	03/19/13 20:11	WI130215-3	1	U	.999	mg/L	99.9	90	110			
L11163-04DUP	DUP	03/19/13 20:14			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L11164***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340770													
WG340770LCSW3	LCSW	03/20/13 15:17	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW6	LCSW	03/20/13 18:33	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW9	LCSW	03/20/13 21:54	PCN40853	6		6.02	units	100.3	98	102			
WG340770LCSW12	LCSW	03/21/13 1:26	PCN40853	6		6.01	units	100.2	98	102			
L11164-01DUP	DUP	03/21/13 3:16			8.2	8.21	units				0.1	20	
L11183-01DUP	DUP	03/21/13 4:53			7.4	7.45	units				0.7	20	
WG340770LCSW15	LCSW	03/21/13 5:10	PCN40853	6		6.01	units	100.2	98	102			

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340779													
WG340779PBW	PBW	03/20/13 16:41				U	mg/L		-20	20			
WG340779LCSW	LCSW	03/20/13 16:41	PCN40252	260		256	mg/L	98.5	80	120			
L11164-04DUP	DUP	03/20/13 17:00			400	388	mg/L				3	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340819													
WG340819PBW	PBW	03/21/13 10:03				5	mg/L		-15	15			
WG340819LCSW	LCSW	03/21/13 10:05	PCN40252	160		162	mg/L	101.3	80	120			
L11164-04DUP	DUP	03/21/13 11:05			U	U	mg/L				0	20	RA

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	50		52.23	mg/L	104.5	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-1.5	1.5			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	30		29.47	mg/L	98.2	90	110			
L11156-05DUP	DUP	03/26/13 9:12			308.3	302.8	mg/L				1.8	20	
L11156-06AS	AS	03/26/13 9:54	WI121018-8	3000	4446	7436	mg/L	99.7	90	110			
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	30		31.54	mg/L	105.1	90	110			
L11164-02DUP	DUP	03/26/13 14:29			82.55	82.14	mg/L				0.5	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	30	42.7	73.62	mg/L	103.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L11164***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11164-01	WG341037	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341311	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341186	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341037	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340819	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11164-02	WG341311	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341186	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340819	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L11164***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11164-03	WG341311	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341186	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340819	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11164-04	WG341311	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341186	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG340719	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340819	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L11164***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11164
Date Received: 03/19/2013 09:59
Received By: ksj
Date Printed: 3/19/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3644	4.9	12	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L11164

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Name: Erik Boe	Address: 300 E. Mallard Dr, Ste 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: eboe@spfwater.com	Telephone: (208) 383-4140

Name:	E-mail:
Company:	Telephone:

Name: SAME AS ABOVE	Address: SAME AS ABOVE
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State ID Zip code 83706 Time Zone MTN

Quote #: SHORT-HOLDS-WETCHEM

Project/PO #: Calico Winter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

			# of Containers	Quote # SHORT-HOLDS-WETCHEM (see list attached)							
Soundough Springs Upper	3/17/13	11:50	3								
Prod-1	3/17/13	13:40	3								
Grassy Spring Stock Tank	3/17/13	14:30	3								
Whiskey Springs	3/17/13	16:30	3								

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

- See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

Erik Boe	3/18/13 10:00		
		WPC 3-19-13 9:59	

L11164 Chain of Custody

FRMAD050.02.11.11 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 01, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11193

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 20, 2013. This project has been assigned to ACZ's project number, L11193. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11193. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 01, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering

April 01, 2013

Project ID: Calico Winter Sampling
ACZ Project ID: L11193

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on March 20, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L11193. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59761

ACZ Sample ID: ***L11193-01***
Date Sampled: *03/18/13 12:15*
Date Received: *03/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/28/13 12:45	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/29/13 12:46	tcd

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		147		*	mg/L	2	20	03/22/13 0:00	abm
Carbonate as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Hydroxide as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Total Alkalinity		148		*	mg/L	2	20	03/22/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	13.31		*	mg/L	0.5	2.5	03/26/13 16:35	tcd
Conductivity @25C	SM2510B	400		*	umhos/cm	1	10	03/22/13 19:12	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 0:13	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 23:02	pjb
Fluoride	M300.0 - Ion Chromatography	0.60		*	mg/L	0.1	0.5	03/26/13 16:35	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.69	H		mg/L	0.02	0.1	04/01/13 11:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.69	H	*	mg/L	0.02	0.1	03/20/13 22:00	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/20/13 22:00	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H	*	units	0.1	0.1	03/22/13 0:00	abm
pH measured at		20.0		*	C	0.1	0.1	03/22/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	290		*	mg/L	10	20	03/22/13 11:36	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 12:24	khw
Sulfate	M300.0 - Ion Chromatography	28.08		*	mg/L	0.5	2.5	03/26/13 16:35	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772

ACZ Sample ID: ***L11193-02***
Date Sampled: *03/18/13 13:35*
Date Received: *03/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/28/13 13:00	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/29/13 12:46	tcd

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		127		*	mg/L	2	20	03/22/13 0:00	abm
Carbonate as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Hydroxide as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Total Alkalinity		127		*	mg/L	2	20	03/22/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	10.47		*	mg/L	0.5	2.5	03/26/13 16:56	tcd
Conductivity @25C	SM2510B	370		*	umhos/cm	1	10	03/22/13 19:21	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 0:15	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 23:02	pjb
Fluoride	M300.0 - Ion Chromatography	0.57		*	mg/L	0.1	0.5	03/26/13 16:56	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.18	H		mg/L	0.02	0.1	04/01/13 11:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.18	H	*	mg/L	0.02	0.1	03/20/13 22:01	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/20/13 22:01	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H	*	units	0.1	0.1	03/22/13 0:00	abm
pH measured at		21.0		*	C	0.1	0.1	03/22/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	280		*	mg/L	10	20	03/22/13 11:38	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 12:26	khw
Sulfate	M300.0 - Ion Chromatography	37.37		*	mg/L	0.5	2.5	03/26/13 16:56	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772-DUP

ACZ Sample ID: ***L11193-03***
Date Sampled: *03/18/13 13:50*
Date Received: *03/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/28/13 13:15	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/29/13 12:47	tcd

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		125		*	mg/L	2	20	03/22/13 0:00	abm
Carbonate as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Hydroxide as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Total Alkalinity		127		*	mg/L	2	20	03/22/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	10.37		*	mg/L	0.5	2.5	03/26/13 17:18	tcd
Conductivity @25C	SM2510B	370		*	umhos/cm	1	10	03/22/13 19:30	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 0:16	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 23:05	pjb
Fluoride	M300.0 - Ion Chromatography	0.57		*	mg/L	0.1	0.5	03/26/13 17:18	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.18	H		mg/L	0.02	0.1	04/01/13 11:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.18	H	*	mg/L	0.02	0.1	03/20/13 22:02	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/20/13 22:02	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H	*	units	0.1	0.1	03/22/13 0:00	abm
pH measured at		21.0		*	C	0.1	0.1	03/22/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	280		*	mg/L	10	20	03/22/13 11:39	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/21/13 12:29	khw
Sulfate	M300.0 - Ion Chromatography	37.61		*	mg/L	0.5	2.5	03/26/13 17:18	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM

ACZ Sample ID: ***L11193-04***
Date Sampled: *03/18/13 15:42*
Date Received: *03/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/28/13 13:23	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/29/13 12:47	tcd

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		169		*	mg/L	2	20	03/22/13 0:00	abm
Carbonate as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Hydroxide as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Total Alkalinity		169		*	mg/L	2	20	03/22/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	29.8	B	*	mg/L	10	50	03/26/13 17:39	tcd
Conductivity @25C	SM2510B	1420		*	umhos/cm	1	10	03/22/13 19:38	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 0:17	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 23:06	pjb
Fluoride	M300.0 - Ion Chromatography	2.4	B	*	mg/L	2	10	03/26/13 17:39	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.05	BH		mg/L	0.02	0.1	04/01/13 11:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.05	BH	*	mg/L	0.02	0.1	03/20/13 22:04	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/20/13 22:04	pjb
pH (lab)	SM4500H+ B								
pH		7.9	H	*	units	0.1	0.1	03/22/13 0:00	abm
pH measured at		21.0		*	C	0.1	0.1	03/22/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	1130		*	mg/L	10	20	03/22/13 11:40	khw
Residue, Non-Filterable (TSS) @105C	SM2540D	73		*	mg/L	5	20	03/23/13 15:06	ljr
Sulfate	M300.0 - Ion Chromatography	578.3		*	mg/L	10	50	03/26/13 17:39	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59763

ACZ Sample ID: ***L11193-05***
Date Sampled: *03/18/13 18:30*
Date Received: *03/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/28/13 13:30	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/29/13 12:47	tcd

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		202		*	mg/L	2	20	03/22/13 0:00	abm
Carbonate as CaCO3		4	B	*	mg/L	2	20	03/22/13 0:00	abm
Hydroxide as CaCO3			U	*	mg/L	2	20	03/22/13 0:00	abm
Total Alkalinity		205		*	mg/L	2	20	03/22/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	22.7	B	*	mg/L	5	25	03/26/13 18:00	tcd
Conductivity @25C	SM2510B	1530		*	umhos/cm	1	10	03/22/13 19:48	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 0:18	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	03/29/13 23:07	pjb
Fluoride	M300.0 - Ion Chromatography	1.2	B	*	mg/L	1	5	03/26/13 18:00	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		UH		mg/L	0.02	0.1	04/01/13 11:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	03/20/13 22:05	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/20/13 22:05	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H	*	units	0.1	0.1	03/22/13 0:00	abm
pH measured at		21.0		*	C	0.1	0.1	03/22/13 0:00	abm
Residue, Filterable (TDS) @180C	SM2540C	1090		*	mg/L	10	20	03/22/13 11:42	khw
Residue, Non-Filterable (TSS) @105C	SM2540D	30		*	mg/L	5	20	03/21/13 12:34	khw
Sulfate	M300.0 - Ion Chromatography	575.7		*	mg/L	5	25	03/26/13 18:00	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11193***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340929													
WG340929PBW1	PBW	03/22/13 15:13				U	mg/L		-20	20			
WG340929LCSW2	LCSW	03/22/13 15:26	WC130313-	820		760.5	mg/L	92.7	90	110			
WG340929LCSW5	LCSW	03/22/13 18:52	WC130313-	820		786.1	mg/L	95.9	90	110			
WG340929PBW2	PBW	03/22/13 19:00				U	mg/L		-20	20			
L11195-02DUP	DUP	03/22/13 20:35			237	251.2	mg/L				5.8	20	
WG340929LCSW8	LCSW	03/22/13 22:30	WC130313-	820		787.8	mg/L	96.1	90	110			
WG340929PBW3	PBW	03/22/13 22:38				3.7	mg/L		-20	20			
WG340929LCSW11	LCSW	03/23/13 1:59	WC130313-	820		771.5	mg/L	94.1	90	110			
WG340929PBW4	PBW	03/23/13 2:07				2.2	mg/L		-20	20			
WG340929LCSW14	LCSW	03/23/13 4:49	WC130313-	820		782.3	mg/L	95.4	90	110			

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	19.98		20	mg/L	100.1	90	110			
WG340759ICB	ICB	03/20/13 18:20				.52	mg/L		-1.5	1.5			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	30		30.79	mg/L	102.6	90	110			
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	30		30.37	mg/L	101.2	90	110			
L11164-02DUP	DUP	03/26/13 14:29			21.86	21.86	mg/L				0	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	30	14.89	45.62	mg/L	102.4	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340929													
WG340929LCSW1	LCSW	03/22/13 15:14	PCN41037	1408.8		1439.3	umhos/cm	102.2	90	110			
WG340929LCSW4	LCSW	03/22/13 18:39	PCN41037	1408.8		1419.1	umhos/cm	100.7	90	110			
L11195-02DUP	DUP	03/22/13 20:35			766	768	umhos/cm				0.3	20	
WG340929LCSW7	LCSW	03/22/13 22:18	PCN41037	1408.8		1405.9	umhos/cm	99.8	90	110			
WG340929LCSW10	LCSW	03/23/13 1:48	PCN41037	1408.8		1401.9	umhos/cm	99.5	90	110			
WG340929LCSW13	LCSW	03/23/13 4:37	PCN41037	1408.8		1383.6	umhos/cm	98.2	90	110			

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341261													
WG341261ICV	ICV	03/29/13 0:09	WI130321-7	.3		.2894	mg/L	96.5	90	110			
WG341261ICB	ICB	03/29/13 0:10				U	mg/L		-0.003	0.003			
WG341229LRB	LRB	03/29/13 0:11				U	mg/L		-0.003	0.003			
WG341229LFB	LFB	03/29/13 0:12	WI130321-3	.2		.1893	mg/L	94.7	90	110			
L11193-01DUP	DUP	03/29/13 0:14			U	U	mg/L				0	20	RA
L11193-02LFM	LFM	03/29/13 0:15	WI130321-3	.2	U	.1894	mg/L	94.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L11193***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341311													
WG341311ICV	ICV	03/29/13 20:58	WI130321-7	.3		.2882	mg/L	96.1	90	110			
WG341311ICB	ICB	03/29/13 20:59				U	mg/L		-0.003	0.003			
WG341314													
WG341293LRB	LRB	03/29/13 22:54				U	mg/L		-0.003	0.003			
WG341293LFB	LFB	03/29/13 22:55	WI130321-5	.2		.1962	mg/L	98.1	90	110			
L11189-01DUP	DUP	03/29/13 22:57			U	U	mg/L				0	20	RA
L11189-02LFM	LFM	03/29/13 22:59	WI130321-5	.2	U	.1854	mg/L	92.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	4.004		4.26	mg/L	106.4	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-0.3	0.3			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	1.5		1.6	mg/L	106.7	90	110			
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	1.5		1.57	mg/L	104.7	90	110			
L11164-02DUP	DUP	03/26/13 14:29			1.16	1.15	mg/L				0.9	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	1.5	.51	2.04	mg/L	102	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340790													
WG340790ICV	ICV	03/20/13 21:42	WI130110-1	2.416		2.526	mg/L	104.6	90	110			
WG340790ICB	ICB	03/20/13 21:44				U	mg/L		-0.06	0.06			
WG340790LFB	LFB	03/20/13 21:48	WI130215-3	2		1.978	mg/L	98.9	90	110			
L11188-01AS	AS	03/20/13 21:51	WI130215-3	2	.05	1.953	mg/L	95.2	90	110			
L11189-01DUP	DUP	03/20/13 21:53			U	U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340790													
WG340790ICV	ICV	03/20/13 21:42	WI130110-1	.609		.597	mg/L	98	90	110			
WG340790ICB	ICB	03/20/13 21:44				U	mg/L		-0.03	0.03			
WG340790LFB	LFB	03/20/13 21:48	WI130215-3	1		.999	mg/L	99.9	90	110			
L11188-01AS	AS	03/20/13 21:51	WI130215-3	1	U	.966	mg/L	96.6	90	110			
L11189-01DUP	DUP	03/20/13 21:53			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340929													
WG340929LCSW3	LCSW	03/22/13 15:29	PCN40853	6		6.01	units	100.2	98	102			
WG340929LCSW6	LCSW	03/22/13 18:55	PCN40853	6		6.01	units	100.2	98	102			
L11195-02DUP	DUP	03/22/13 20:35			8.2	8.17	units				0.4	20	
WG340929LCSW9	LCSW	03/22/13 22:33	PCN40853	6		6.01	units	100.2	98	102			
WG340929LCSW12	LCSW	03/23/13 2:02	PCN40853	6		6	units	100	98	102			
WG340929LCSW15	LCSW	03/23/13 4:52	PCN40853	6		6.01	units	100.2	98	102			

SPF Water Engineering

ACZ Project ID: ***L11193***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340907													
WG340907PBW	PBW	03/22/13 11:20				U	mg/L		-20	20			
WG340907LCSW	LCSW	03/22/13 11:21	PCN40252	260		258	mg/L	99.2	80	120			
L11196-01DUP	DUP	03/22/13 11:49			180	194	mg/L				7.5	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340835													
WG340835PBW	PBW	03/21/13 11:45				U	mg/L		-15	15			
WG340835LCSW	LCSW	03/21/13 11:47	PCN40252	160		182	mg/L	113.8	80	120			
L11195-01DUP	DUP	03/21/13 12:45			10	12	mg/L				18.2	20	RA
WG340975													
WG340975PBW	PBW	03/23/13 15:00				U	mg/L		-6	6			
WG340975LCSW	LCSW	03/23/13 15:01	PCN40253	160		149	mg/L	93.1	80	120			
L11196-01DUP	DUP	03/23/13 15:15			U	U	mg/L				0	20	RA

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG340759													
WG340759ICV	ICV	03/20/13 17:59	WI130315-7	50		52.23	mg/L	104.5	90	110			
WG340759ICB	ICB	03/20/13 18:20				U	mg/L		-1.5	1.5			
WG341037													
WG341037LFB1	LFB	03/26/13 3:34	WI121018-8	30		29.47	mg/L	98.2	90	110			
WG341037LFB2	LFB	03/26/13 13:46	WI121018-8	30		31.54	mg/L	105.1	90	110			
L11164-02DUP	DUP	03/26/13 14:29			82.55	82.14	mg/L				0.5	20	
L11164-03AS	AS	03/26/13 15:11	WI121018-8	30	42.7	73.62	mg/L	103.1	90	110			

SPF Water Engineering ACZ Project ID: ***L11193***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11193-01	WG340929	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG341037	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG341261	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341314	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG340790	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340929	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG340907	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG340835	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L11193***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11193-02	WG340929	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG341037	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG341261	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341314	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG340790	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340929	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG340907	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG340835	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L11193***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11193-03	WG340929	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG341037	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG341261	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341314	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG340790	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340929	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG340907	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG340835	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L11193***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11193-04	WG340929	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG341037	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG341261	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341314	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	DD	Sample required dilution due to matrix color or odor.
			M300.0 - Ion Chromatography	DF	Sample required dilution due to high sediment.
			M300.0 - Ion Chromatography	DH	Sample required dilution due to high TDS and/or EC value.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG340790	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340929	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
			SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG340907	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG340975	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering

ACZ Project ID: ***L11193***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11193-05	WG340929	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG341037	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG341261	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341314	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	DH	Sample required dilution due to high TDS and/or EC value.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG340790	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG340929	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG340907	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG340835	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341037	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG340929	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L11193***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11193
Date Received: 03/20/2013 09:54
Received By: ksj
Date Printed: 3/20/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3132	8	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

L1193

CHAIN of CUSTODY

Name: Jason Thompson	Address: 300 E Mallard Ste 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Name:	E-mail:
Company:	Telephone:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thompson Sampler's site Information State: ID Zip code: 83706 Time Zone: MTN

Quote #: SHORT-HOLDS - WETCHEM

Project/PO #: Calico Winter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

			# of Containers	Quote: SHORT-HOLDS-WETCHEM (See list attached)						
59761	3-18-13 12:15	groundwater	3	X						
59772	3-18-13 13:35	water	3	X						
59772-DUP	3-18-13 13:50	water	3	X						
BLM	3-18-13 15:42	water	3	X						
59763	3-18-13 18:30	GW	3	X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

SEE ATTACHED LIST FOR PARAMETERS TO BE ANALYZED

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

[signature]	3-19-13 8:45	[signature]	3.20.13 9:54

L11193 Chain of Custody

FRMAD050.02.11.11 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 23, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11314

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 28, 2013. This project has been assigned to ACZ's project number, L11314. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11314. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 23, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering

April 23, 2013

Project ID: Calico Winter Sampling
ACZ Project ID: L11314

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on March 28, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L11314. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: POISON SPRINGS

ACZ Sample ID: ***L11314-01***
Date Sampled: *03/26/13 18:30*
Date Received: *03/28/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							04/02/13 16:54	lhb
Cyanide, WAD	SM4500-CN I- distillation							04/01/13 15:23	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		113			mg/L	2	20	03/30/13 0:00	ljr
Carbonate as CaCO3		54			mg/L	2	20	03/30/13 0:00	ljr
Hydroxide as CaCO3			U		mg/L	2	20	03/30/13 0:00	ljr
Total Alkalinity		167			mg/L	2	20	03/30/13 0:00	ljr
Chloride	M300.0 - Ion Chromatography	9.28			mg/L	0.5	2.5	04/21/13 16:47	tcd
Conductivity @25C	SM2510B	497			umhos/cm	1	10	03/30/13 16:38	ljr
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/02/13 23:58	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/01/13 16:38	tcd
Fluoride	M300.0 - Ion Chromatography	0.81		*	mg/L	0.1	0.5	04/21/13 16:47	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		U		mg/L	0.02	0.1	04/22/13 16:21	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.02	0.1	03/28/13 18:12	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	03/28/13 18:12	pjb
pH (lab)	SM4500H+ B								
pH		9.2	H		units	0.1	0.1	03/30/13 0:00	ljr
pH measured at		20.0			C	0.1	0.1	03/30/13 0:00	ljr
Residue, Filterable (TDS) @180C	SM2540C	350			mg/L	10	20	03/29/13 16:39	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/30/13 16:58	khw
Sulfate	M300.0 - Ion Chromatography	58.04			mg/L	0.5	2.5	04/21/13 16:47	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BISHOP WELL

ACZ Sample ID: ***L11314-02***
Date Sampled: *03/26/13 17:00*
Date Received: *03/28/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							04/05/13 11:14	mpb
Cyanide, WAD	SM4500-CN I- distillation							04/03/13 10:00	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		139			mg/L	2	20	03/30/13 0:00	ljr
Carbonate as CaCO3		34			mg/L	2	20	03/30/13 0:00	ljr
Hydroxide as CaCO3			U		mg/L	2	20	03/30/13 0:00	ljr
Total Alkalinity		173			mg/L	2	20	03/30/13 0:00	ljr
Chloride	M300.0 - Ion Chromatography	6.96			mg/L	0.5	2.5	04/21/13 17:22	tcd
Conductivity @25C	SM2510B	369			umhos/cm	1	10	03/30/13 16:48	ljr
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/08/13 16:38	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/03/13 23:35	pjb
Fluoride	M300.0 - Ion Chromatography	0.81		*	mg/L	0.1	0.5	04/21/13 17:22	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.05	BH		mg/L	0.02	0.1	04/22/13 16:22	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.05	BH	*	mg/L	0.02	0.1	03/28/13 18:15	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/28/13 18:15	pjb
pH (lab)	SM4500H+ B								
pH		8.6	H		units	0.1	0.1	03/30/13 0:00	ljr
pH measured at		20.0			C	0.1	0.1	03/30/13 0:00	ljr
Residue, Filterable (TDS) @180C	SM2540C	240			mg/L	10	20	03/29/13 16:40	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/30/13 17:00	khw
Sulfate	M300.0 - Ion Chromatography	19.72			mg/L	0.5	2.5	04/21/13 17:22	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59760

ACZ Sample ID: ***L11314-03***
Date Sampled: *03/26/13 13:40*
Date Received: *03/28/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							04/05/13 11:28	mpb
Cyanide, WAD	SM4500-CN I- distillation							04/03/13 10:15	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		156			mg/L	2	20	03/30/13 0:00	ljr
Carbonate as CaCO3			U		mg/L	2	20	03/30/13 0:00	ljr
Hydroxide as CaCO3			U		mg/L	2	20	03/30/13 0:00	ljr
Total Alkalinity		156			mg/L	2	20	03/30/13 0:00	ljr
Chloride	M300.0 - Ion Chromatography	9.46			mg/L	0.5	2.5	04/21/13 17:57	tcd
Conductivity @25C	SM2510B	366			umhos/cm	1	10	03/30/13 17:29	ljr
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/08/13 16:40	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/03/13 23:36	pjb
Fluoride	M300.0 - Ion Chromatography	0.59		*	mg/L	0.1	0.5	04/21/13 17:57	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.72	H		mg/L	0.02	0.1	04/22/13 16:22	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.72	H	*	mg/L	0.02	0.1	03/28/13 18:17	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/28/13 18:17	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	03/30/13 0:00	ljr
pH measured at		20.0			C	0.1	0.1	03/30/13 0:00	ljr
Residue, Filterable (TDS) @180C	SM2540C	270			mg/L	10	20	03/29/13 16:41	khw
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/30/13 17:02	khw
Sulfate	M300.0 - Ion Chromatography	29.66			mg/L	0.5	2.5	04/21/13 17:57	tcd

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-1

ACZ Sample ID: ***L11314-04***
Date Sampled: *03/26/13 11:40*
Date Received: *03/28/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							04/05/13 11:43	mpb
Cyanide, WAD	SM4500-CN I- distillation							04/03/13 10:30	mpb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		126			mg/L	2	20	03/30/13 0:00	ljr
Carbonate as CaCO3		4	B		mg/L	2	20	03/30/13 0:00	ljr
Hydroxide as CaCO3			U		mg/L	2	20	03/30/13 0:00	ljr
Total Alkalinity		130			mg/L	2	20	03/30/13 0:00	ljr
Chloride	M300.0 - Ion Chromatography	8.48			mg/L	0.5	2.5	04/21/13 18:15	tcd
Conductivity @25C	SM2510B	347			umhos/cm	1	10	03/30/13 17:37	ljr
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/08/13 16:42	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation		U	*	mg/L	0.003	0.01	04/03/13 23:38	pjb
Fluoride	M300.0 - Ion Chromatography	0.50		*	mg/L	0.1	0.5	04/21/13 18:15	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.60	H		mg/L	0.02	0.1	04/22/13 16:22	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.60	H	*	mg/L	0.02	0.1	03/28/13 18:18	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	03/28/13 18:18	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/30/13 0:00	ljr
pH measured at		20.0			C	0.1	0.1	03/30/13 0:00	ljr
Residue, Filterable (TDS) @180C	SM2540C	240			mg/L	10	20	03/29/13 16:43	khw
Residue, Non-Filterable (TSS) @105C	SM2540D	7	B	*	mg/L	5	20	03/30/13 17:04	khw
Sulfate	M300.0 - Ion Chromatography	30.60			mg/L	0.5	2.5	04/21/13 18:15	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11314***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341320													
WG341320PBW1	PBW	03/30/13 13:43				2.9	mg/L		-20	20			
WG341320LCSW2	LCSW	03/30/13 13:57	WC130328-1	820		776.6	mg/L	94.7	90	110			
L11314-02DUP	DUP	03/30/13 16:57			173	156.6	mg/L				10	20	
WG341320LCSW5	LCSW	03/30/13 17:10	WC130328-1	820		766.7	mg/L	93.5	90	110			
WG341320PBW2	PBW	03/30/13 17:19				3.1	mg/L		-20	20			
L11316-05DUP	DUP	03/30/13 18:50			98	97.5	mg/L				0.5	20	
WG341320LCSW8	LCSW	03/30/13 20:37	WC130328-1	820		764.8	mg/L	93.3	90	110			
WG341320PBW3	PBW	03/30/13 20:46				3.3	mg/L		-20	20			
WG341320LCSW11	LCSW	03/31/13 1:21	WC130328-1	820		791.1	mg/L	96.5	90	110			
WG341320PBW4	PBW	03/31/13 1:30				U	mg/L		-20	20			
WG341320LCSW14	LCSW	03/31/13 4:34	WC130328-1	820		796.9	mg/L	97.2	90	110			

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG342332													
WG342332ICV	ICV	04/18/13 16:54	WI130315-7	19.98		20.42	mg/L	102.2	90	110			
WG342332ICB	ICB	04/18/13 17:11				.61	mg/L		-1.5	1.5			
WG342332LFB1	LFB	04/21/13 16:30	WI121018-8	30		31.44	mg/L	104.8	90	110			
L11314-01DUP	DUP	04/21/13 17:05			9.28	9.27	mg/L				0.1	20	
L11314-02AS	AS	04/21/13 17:40	WI121018-8	30	6.96	37.23	mg/L	100.9	90	110			
WG342332LFB2	LFB	04/22/13 0:57	WI121018-8	30		30.6	mg/L	102	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341320													
WG341320LCSW1	LCSW	03/30/13 13:45	PCN41037	1408.8		1445.5	umhos/cm	102.6	90	110			
L11314-02DUP	DUP	03/30/13 16:57			369	369	umhos/cm				0	20	
WG341320LCSW4	LCSW	03/30/13 16:59	PCN41037	1408.8		1421.1	umhos/cm	100.9	90	110			
L11316-05DUP	DUP	03/30/13 18:50			234	236	umhos/cm				0.9	20	
WG341320LCSW7	LCSW	03/30/13 20:25	PCN41037	1408.8		1414	umhos/cm	100.4	90	110			
WG341320LCSW10	LCSW	03/31/13 1:09	PCN41037	1408.8		1405.9	umhos/cm	99.8	90	110			
WG341320LCSW13	LCSW	03/31/13 4:21	PCN41037	1408.8		1395.8	umhos/cm	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L11314***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341468													
WG341468ICV	ICV	04/02/13 23:12	WI130321-7	.3		.2873	mg/L	95.8	90	110			
WG341468ICB	ICB	04/02/13 23:12				U	mg/L		-0.003	0.003			
WG341471													
WG341447LRB	LRB	04/02/13 23:36				U	mg/L		-0.003	0.003			
WG341447LFB	LFB	04/02/13 23:37	WI130321-3	.2		.1917	mg/L	95.9	90	110			
L11292-02DUP	DUP	04/02/13 23:52			U	U	mg/L				0	20	RA
L11292-03LFM	LFM	04/02/13 23:53	WI130321-3	.2	U	.1771	mg/L	88.6	90	110			M2
WG341732													
WG341732ICV	ICV	04/08/13 16:35	WI130405-7	.3		.2915	mg/L	97.2	90	110			
WG341732ICB	ICB	04/08/13 16:35				U	mg/L		-0.003	0.003			
WG341608LRB	LRB	04/08/13 16:36				U	mg/L		-0.003	0.003			
L11314-02DUP	DUP	04/08/13 16:39			U	U	mg/L				0	20	RA
L11314-03LFM	LFM	04/08/13 16:41	WI130405-2	.2	U	.204	mg/L	102	90	110			
WG341608LFB	LFB	04/08/13 17:03	WI130405-2	.2		.2001	mg/L	100.1	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341366													
WG341366ICV	ICV	04/01/13 15:37	WI130321-7	.3		.295	mg/L	98.3	90	110			
WG341366ICB	ICB	04/01/13 15:38				U	mg/L		-0.003	0.003			
WG341371													
WG341351LRB	LRB	04/01/13 16:14				U	mg/L		-0.003	0.003			
WG341351LFB	LFB	04/01/13 16:15	WI130321-5	.2		.1917	mg/L	95.9	90	110			
L11281-01DUP	DUP	04/01/13 16:28			U	U	mg/L				0	20	RA
L11290-01LFM	LFM	04/01/13 16:30	WI130321-5	.2	U	.1847	mg/L	92.4	90	110			
WG341525													
WG341525ICV	ICV	04/03/13 23:31	WI130321-7	.3		.2929	mg/L	97.6	90	110			
WG341525ICB	ICB	04/03/13 23:32				U	mg/L		-0.003	0.003			
WG341481LRB	LRB	04/03/13 23:33				U	mg/L		-0.003	0.003			
WG341481LFB	LFB	04/03/13 23:34	WI130321-5	.2		.1977	mg/L	98.9	90	110			
L11314-02DUP	DUP	04/03/13 23:35			U	U	mg/L				0	20	RA
L11314-03LFM	LFM	04/03/13 23:37	WI130321-5	.2	U	.1831	mg/L	91.6	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG342332													
WG342332ICV	ICV	04/18/13 16:54	WI130315-7	4.004		4.29	mg/L	107.1	90	110			
WG342332ICB	ICB	04/18/13 17:11				U	mg/L		-0.3	0.3			
WG342332LFB1	LFB	04/21/13 16:30	WI121018-8	1.5		1.64	mg/L	109.3	90	110			
L11314-01DUP	DUP	04/21/13 17:05			.81	.82	mg/L				1.2	20	RA
L11314-02AS	AS	04/21/13 17:40	WI121018-8	1.5	.81	2.33	mg/L	101.3	90	110			
WG342332LFB2	LFB	04/22/13 0:57	WI121018-8	1.5		1.59	mg/L	106	90	110			

SPF Water Engineering

ACZ Project ID: ***L11314***

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341253													
WG341253ICV	ICV	03/28/13 18:06	WI130110-1	2.416		2.483	mg/L	102.8	90	110			
WG341253ICB	ICB	03/28/13 18:08				U	mg/L		-0.06	0.06			
WG341253LFB	LFB	03/28/13 18:11	WI130215-3	2		1.972	mg/L	98.6	90	110			
L11314-01AS	AS	03/28/13 18:14	WI130215-3	2	U	1.871	mg/L	93.6	90	110			
L11314-02DUP	DUP	03/28/13 18:16			.05	.046	mg/L				8.3	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341253													
WG341253ICV	ICV	03/28/13 18:06	WI130110-1	.609		.611	mg/L	100.3	90	110			
WG341253ICB	ICB	03/28/13 18:08				U	mg/L		-0.03	0.03			
WG341253LFB	LFB	03/28/13 18:11	WI130215-3	1		1.047	mg/L	104.7	90	110			
L11314-01AS	AS	03/28/13 18:14	WI130215-3	1	U	1.009	mg/L	100.9	90	110			
L11314-02DUP	DUP	03/28/13 18:16			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341320													
WG341320LCSW3	LCSW	03/30/13 14:01	PCN40853	6		6	units	100	98	102			
L11314-02DUP	DUP	03/30/13 16:57			8.6	8.56	units				0.5	20	
WG341320LCSW6	LCSW	03/30/13 17:13	PCN40853	6		6.01	units	100.2	98	102			
L11316-05DUP	DUP	03/30/13 18:50			8.3	8.31	units				0.1	20	
WG341320LCSW9	LCSW	03/30/13 20:40	PCN40853	6		6	units	100	98	102			
WG341320LCSW12	LCSW	03/31/13 1:25	PCN40853	6		6	units	100	98	102			
WG341320LCSW15	LCSW	03/31/13 4:37	PCN40853	6		6	units	100	98	102			

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341306													
WG341306PBW	PBW	03/29/13 16:30				U	mg/L		-20	20			
WG341306LCSW	LCSW	03/29/13 16:31	PCN40253	260		254	mg/L	97.7	80	120			
L11318-01DUP	DUP	03/29/13 16:45			430	440	mg/L				2.3	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341323													
WG341323PBW	PBW	03/30/13 16:45				U	mg/L		-15	15			
WG341323LCSW	LCSW	03/30/13 16:46	PCN40254	160		149	mg/L	93.1	80	120			
L11314-04DUP	DUP	03/30/13 17:05			7	8	mg/L				13.3	20	RA

SPF Water Engineering

ACZ Project ID: ***L11314***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG342332													
WG342332ICV	ICV	04/18/13 16:54	WI130315-7	50		49.51	mg/L	99	90	110			
WG342332ICB	ICB	04/18/13 17:11				U	mg/L		-1.5	1.5			
WG342332LFB1	LFB	04/21/13 16:30	WI121018-8	30		31.99	mg/L	106.6	90	110			
L11314-01DUP	DUP	04/21/13 17:05			58.04	58.18	mg/L				0.2	20	
L11314-02AS	AS	04/21/13 17:40	WI121018-8	30	19.72	49.41	mg/L	99	90	110			
WG342332LFB2	LFB	04/22/13 0:57	WI121018-8	30		30.31	mg/L	101	90	110			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L11314***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11314-01	WG341471	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341371	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG342332	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341253	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341323	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11314-02	WG341732	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341525	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG342332	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341253	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341323	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L11314***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11314-03	WG341732	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341525	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG342332	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341253	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341323	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11314-04	WG341732	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341525	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG342332	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341253	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341323	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering

ACZ Project ID: ***L11314***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11314
Date Received: 03/28/2013 09:45
Received By: gac
Date Printed: 3/28/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
4175	3.1	14	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11314

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thurston Sampler's site information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [ ]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM
PO#: Calico Winter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SHORT-HOLDS-WETCHEM	*See attached list
Poison Springs	3/26/13 18:30		3	X	
Bishop Well	3/26/13 17:00		3	X	
59760	3/26/13 13:40		3	X	
PW-1	3/26/13 11:40		3	X	

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/27/13 10:30		
		3-28-13	9:45

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11314 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 15, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11353

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 01, 2013. This project has been assigned to ACZ's project number, L11353. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11353. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 15, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering

April 15, 2013

Project ID: Calico Winter Sampling
ACZ Project ID: L11353

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 7 ground water samples from SPF Water Engineering on April 1, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L11353. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. The total versus dissolved disparity involving Manganese (sample -01) was reanalyzed for confirmation. Please be advised that ACZ Labs will retest any suspect analyte at client request.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM

ACZ Sample ID: ***L11353-01***
Date Sampled: *03/18/13 15:42*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 12:10	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 9:03	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 12:48	scp

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM

ACZ Sample ID: ***L11353-01***
Date Sampled: *03/18/13 15:42*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 22:21	aeb
Aluminum, total	M200.7 ICP	0.03	B		mg/L	0.03	0.2	04/06/13 6:18	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 19:56	msh
Antimony, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	04/06/13 0:08	pmc
Arsenic, dissolved	M200.8 ICP-MS	1.46			mg/L	0.01	0.05	04/08/13 17:11	msh
Arsenic, total	M200.8 ICP-MS	1.54			mg/L	0.02	0.1	04/08/13 21:44	pmc
Barium, dissolved	M200.7 ICP	0.043			mg/L	0.003	0.02	04/03/13 22:21	aeb
Barium, total	M200.7 ICP	0.037			mg/L	0.003	0.02	04/06/13 6:18	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:56	msh
Beryllium, total	M200.8 ICP-MS	0.00011	B		mg/L	0.00005	0.0003	04/06/13 0:08	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 22:21	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 13:29	aeb
Boron, dissolved	M200.8 ICP-MS	0.66		*	mg/L	0.03	0.05	04/08/13 17:11	msh
Boron, total	M200.8 ICP-MS	0.64		*	mg/L	0.05	0.1	04/08/13 21:44	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:56	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:08	pmc
Calcium, dissolved	M200.7 ICP	82.1		*	mg/L	0.2	1	04/03/13 22:21	aeb
Calcium, total	M200.7 ICP	67.9			mg/L	0.2	1	04/06/13 6:18	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 19:56	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 0:08	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.02364			mg/L	0.00005	0.0003	04/05/13 19:56	msh
Cobalt, total	M200.8 ICP-MS	0.02296			mg/L	0.00005	0.0003	04/06/13 0:08	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:56	msh
Copper, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0005	0.003	04/06/13 0:08	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 1:57	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:18	aeb
Iron, dissolved	M200.7 ICP	55.00			mg/L	0.02	0.05	04/03/13 22:21	aeb
Iron, total	M200.7 ICP	47.40		*	mg/L	0.02	0.05	04/06/13 6:18	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:56	msh
Lead, total	M200.8 ICP-MS	0.0005			mg/L	0.0001	0.0005	04/06/13 0:08	pmc
Lithium, dissolved	M200.7 ICP	0.58			mg/L	0.02	0.1	04/03/13 22:21	aeb
Lithium, total	M200.7 ICP	0.53			mg/L	0.02	0.1	04/06/13 6:18	aeb
Magnesium, dissolved	M200.7 ICP	4.1			mg/L	0.2	1	04/03/13 22:21	aeb
Magnesium, total	M200.7 ICP	3.2			mg/L	0.2	1	04/06/13 6:18	aeb
Manganese, dissolved	M200.8 ICP-MS	0.57			mg/L	0.03	0.1	04/08/13 17:11	msh
Manganese, total	M200.8 ICP-MS	0.43			mg/L	0.05	0.3	04/08/13 21:44	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 13:50	scp
Mercury, total	M1631, Atomic Fluorescence	9		*	ng/L	1	3	04/12/13 12:20	scp
Molybdenum, dissolved	M200.8 ICP-MS	0.0017	B		mg/L	0.0005	0.003	04/05/13 19:56	msh
Molybdenum, total	M200.8 ICP-MS	0.0019	B		mg/L	0.0005	0.003	04/06/13 0:08	pmc
Nickel, dissolved	M200.8 ICP-MS	0.0102			mg/L	0.0006	0.003	04/05/13 19:56	msh
Nickel, total	M200.8 ICP-MS	0.0100			mg/L	0.0006	0.003	04/06/13 0:08	pmc
Potassium, dissolved	M200.7 ICP	4.3			mg/L	0.3	2	04/03/13 22:21	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM

ACZ Sample ID: ***L11353-01***
Date Sampled: *03/18/13 15:42*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	3.6			mg/L	0.3	2	04/06/13 6:18	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:21	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:18	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 19:56	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 0:08	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:56	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:08	pmc
Sodium, dissolved	M200.7 ICP	268			mg/L	0.3	2	04/03/13 22:21	aeb
Sodium, total	M200.7 ICP	253			mg/L	0.3	2	04/06/13 6:18	aeb
Strontium, dissolved	M200.7 ICP	1.77		*	mg/L	0.01	0.05	04/03/13 22:21	aeb
Strontium, total	M200.7 ICP	1.54			mg/L	0.01	0.05	04/06/13 6:18	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:56	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:08	pmc
Tin, dissolved	M200.8 ICP-MS	0.0001	B	*	mg/L	0.0001	0.0005	04/05/13 19:56	msh
Tin, total	M200.8 ICP-MS	0.0011		*	mg/L	0.0001	0.0005	04/06/13 0:08	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:21	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:18	aeb
Vanadium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/05/13 19:56	msh
Vanadium, total	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/06/13 0:08	pmc
Zinc, dissolved	M200.7 ICP	0.09			mg/L	0.01	0.05	04/03/13 22:21	aeb
Zinc, total	M200.7 ICP	0.09			mg/L	0.01	0.05	04/06/13 6:18	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	222			mg/L	1	7	04/15/13 15:45	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.54		*	mg/L	0.05	0.5	04/08/13 15:29	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.48		*	mg/L	0.02	0.1	04/09/13 21:49	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM 6 VOLS

ACZ Sample ID: ***L11353-02***
Date Sampled: *03/18/13 16:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M200.2 ICP							04/05/13 9:14	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:00	scp

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	2.220			mg/L	0.004	0.02	04/08/13 17:20	msh
Arsenic, total	M200.8 ICP-MS	2.410			mg/L	0.004	0.02	04/08/13 21:47	pmc
Calcium, dissolved	M200.7 ICP	138		*	mg/L	0.2	1	04/03/13 22:24	aeb
Calcium, total	M200.7 ICP	131			mg/L	0.2	1	04/06/13 6:21	aeb
Iron, dissolved	M200.7 ICP	92.20			mg/L	0.02	0.05	04/03/13 22:24	aeb
Iron, total	M200.7 ICP	88.90		*	mg/L	0.02	0.05	04/06/13 6:21	aeb
Magnesium, dissolved	M200.7 ICP	6.9			mg/L	0.2	1	04/03/13 22:24	aeb
Magnesium, total	M200.7 ICP	6.2			mg/L	0.2	1	04/06/13 6:21	aeb
Manganese, dissolved	M200.8 ICP-MS	0.93			mg/L	0.01	0.05	04/08/13 17:20	msh
Manganese, total	M200.8 ICP-MS	0.90			mg/L	0.01	0.05	04/08/13 21:47	pmc
Potassium, dissolved	M200.7 ICP	5.4			mg/L	0.3	2	04/03/13 22:24	aeb
Potassium, total	M200.7 ICP	5.0			mg/L	0.3	2	04/06/13 6:21	aeb
Sodium, dissolved	M200.7 ICP	302			mg/L	0.3	2	04/03/13 22:24	aeb
Sodium, total	M200.7 ICP	302			mg/L	0.3	2	04/06/13 6:21	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		84			mg/L	2	20	04/01/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	04/01/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	04/01/13 0:00	abm
Total Alkalinity		84		*	mg/L	2	20	04/01/13 0:00	abm
Hardness as CaCO3	SM2340B - Calculation	373			mg/L	1	7	04/15/13 15:46	calc
Sulfate	D516-02 - Turbidimetric	1130			mg/L	50	300	04/05/13 15:37	mpb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BLM 12 VOLS

ACZ Sample ID: ***L11353-03***
Date Sampled: *03/18/13 16:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:12	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 9:26	aeb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	2.980			mg/L	0.004	0.02	04/08/13 17:24	msh
Arsenic, total	M200.8 ICP-MS	3.380			mg/L	0.008	0.04	04/08/13 21:49	pmc
Calcium, dissolved	M200.7 ICP	191		*	mg/L	0.2	1	04/03/13 22:28	aeb
Calcium, total	M200.7 ICP	185			mg/L	0.2	1	04/06/13 6:24	aeb
Iron, dissolved	M200.7 ICP	131			mg/L	0.02	0.05	04/03/13 22:28	aeb
Iron, total	M200.7 ICP	129		*	mg/L	0.02	0.05	04/06/13 6:24	aeb
Magnesium, dissolved	M200.7 ICP	9.6			mg/L	0.2	1	04/03/13 22:28	aeb
Magnesium, total	M200.7 ICP	8.8			mg/L	0.2	1	04/06/13 6:24	aeb
Manganese, dissolved	M200.8 ICP-MS	1.29			mg/L	0.01	0.05	04/08/13 17:24	msh
Manganese, total	M200.8 ICP-MS	1.24			mg/L	0.02	0.1	04/08/13 21:49	pmc
Potassium, dissolved	M200.7 ICP	6.6			mg/L	0.3	2	04/03/13 22:28	aeb
Potassium, total	M200.7 ICP	6.3			mg/L	0.3	2	04/06/13 6:24	aeb
Sodium, dissolved	M200.7 ICP	323			mg/L	0.3	2	04/03/13 22:28	aeb
Sodium, total	M200.7 ICP	320			mg/L	0.3	2	04/06/13 6:24	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		37			mg/L	2	20	04/01/13 0:00	abm
Carbonate as CaCO3			U		mg/L	2	20	04/01/13 0:00	abm
Hydroxide as CaCO3			U		mg/L	2	20	04/01/13 0:00	abm
Total Alkalinity		37		*	mg/L	2	20	04/01/13 0:00	abm
Hardness as CaCO3	SM2340B - Calculation	517			mg/L	1	7	04/15/13 15:46	calc
Sulfate	D516-02 - Turbidimetric	830			mg/L	50	300	04/05/13 15:39	mpb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772

ACZ Sample ID: ***L11353-04***
Date Sampled: *03/18/13 13:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 12:35	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:01	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:24	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772

ACZ Sample ID: ***L11353-04***
Date Sampled: *03/18/13 13:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.04	B		mg/L	0.03	0.2	04/03/13 22:31	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:34	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0004	0.002	04/05/13 20:12	msh
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	04/06/13 0:17	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0410		*	mg/L	0.0002	0.001	04/05/13 20:12	msh
Arsenic, total	M200.8 ICP-MS	0.0366			mg/L	0.0002	0.001	04/06/13 0:17	pmc
Barium, dissolved	M200.7 ICP	0.030			mg/L	0.003	0.02	04/03/13 22:31	aeb
Barium, total	M200.7 ICP	0.026			mg/L	0.003	0.02	04/06/13 6:34	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:12	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:17	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 22:31	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 13:42	aeb
Boron, dissolved	M200.8 ICP-MS	0.072		*	mg/L	0.005	0.01	04/08/13 17:27	msh
Boron, total	M200.8 ICP-MS	0.08		*	mg/L	0.01	0.02	04/08/13 21:52	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:12	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:17	pmc
Calcium, dissolved	M200.7 ICP	40.3		*	mg/L	0.2	1	04/03/13 22:31	aeb
Calcium, total	M200.7 ICP	39.9			mg/L	0.2	1	04/06/13 6:34	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	04/05/13 20:12	msh
Chromium, total	M200.8 ICP-MS	0.0009	B		mg/L	0.0005	0.002	04/06/13 0:17	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00028	B		mg/L	0.00005	0.0003	04/05/13 20:12	msh
Cobalt, total	M200.8 ICP-MS	0.00008	B		mg/L	0.00005	0.0003	04/06/13 0:17	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:12	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:17	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:06	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:34	aeb
Iron, dissolved	M200.7 ICP	0.28			mg/L	0.02	0.05	04/03/13 22:31	aeb
Iron, total	M200.7 ICP	0.04	B	*	mg/L	0.02	0.05	04/06/13 6:34	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:12	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:17	pmc
Lithium, dissolved	M200.7 ICP	0.05	B		mg/L	0.02	0.1	04/03/13 22:31	aeb
Lithium, total	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/06/13 6:34	aeb
Magnesium, dissolved	M200.7 ICP	7.5			mg/L	0.2	1	04/03/13 22:31	aeb
Magnesium, total	M200.7 ICP	7.4			mg/L	0.2	1	04/06/13 6:34	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0007	B	*	mg/L	0.0005	0.003	04/05/13 20:12	msh
Manganese, total	M200.8 ICP-MS	0.0013	B		mg/L	0.0005	0.003	04/06/13 0:17	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:10	scp
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 12:26	scp
Molybdenum, dissolved	M200.8 ICP-MS	0.0037			mg/L	0.0005	0.003	04/05/13 20:12	msh
Molybdenum, total	M200.8 ICP-MS	0.0041			mg/L	0.0005	0.003	04/06/13 0:17	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:12	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:17	pmc
Potassium, dissolved	M200.7 ICP	6.3			mg/L	0.3	2	04/03/13 22:31	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772

ACZ Sample ID: ***L11353-04***
Date Sampled: *03/18/13 13:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	6.1			mg/L	0.3	2	04/06/13 6:34	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:31	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:34	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0033			mg/L	0.0001	0.0003	04/05/13 20:12	msh
Selenium, total	M200.8 ICP-MS	0.0027			mg/L	0.0001	0.0003	04/06/13 0:17	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:12	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:17	pmc
Sodium, dissolved	M200.7 ICP	28.5			mg/L	0.3	2	04/03/13 22:31	aeb
Sodium, total	M200.7 ICP	26.3			mg/L	0.3	2	04/06/13 6:34	aeb
Strontium, dissolved	M200.7 ICP	0.22		*	mg/L	0.01	0.05	04/03/13 22:31	aeb
Strontium, total	M200.7 ICP	0.20			mg/L	0.01	0.05	04/06/13 6:34	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:12	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:17	pmc
Tin, dissolved	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0005	04/05/13 20:12	msh
Tin, total	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0005	04/06/13 0:17	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:31	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:34	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0180			mg/L	0.0002	0.001	04/05/13 20:12	msh
Vanadium, total	M200.8 ICP-MS	0.0182			mg/L	0.0002	0.001	04/06/13 0:17	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 22:31	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 6:34	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	132			mg/L	1	7	04/15/13 15:46	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:30	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/09/13 18:39	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772 DUPLICATE

ACZ Sample ID: ***L11353-05***
Date Sampled: *03/18/13 13:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:00	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:12	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:36	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772 DUPLICATE

ACZ Sample ID: ***L11353-05***
Date Sampled: *03/18/13 13:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 22:41	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:37	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0004	0.002	04/05/13 20:15	msh
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	04/06/13 0:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0398		*	mg/L	0.0002	0.001	04/05/13 20:15	msh
Arsenic, total	M200.8 ICP-MS	0.0374			mg/L	0.0002	0.001	04/06/13 0:20	pmc
Barium, dissolved	M200.7 ICP	0.030			mg/L	0.003	0.02	04/03/13 22:41	aeb
Barium, total	M200.7 ICP	0.026			mg/L	0.003	0.02	04/06/13 6:37	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:15	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:20	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 22:41	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 13:45	aeb
Boron, dissolved	M200.8 ICP-MS	0.072		*	mg/L	0.005	0.01	04/08/13 17:30	msh
Boron, total	M200.8 ICP-MS	0.08		*	mg/L	0.01	0.02	04/08/13 21:55	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:15	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:20	pmc
Calcium, dissolved	M200.7 ICP	40.1		*	mg/L	0.2	1	04/03/13 22:41	aeb
Calcium, total	M200.7 ICP	39.7			mg/L	0.2	1	04/06/13 6:37	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	04/05/13 20:15	msh
Chromium, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	04/06/13 0:20	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00039			mg/L	0.00005	0.0003	04/05/13 20:15	msh
Cobalt, total	M200.8 ICP-MS	0.00007	B		mg/L	0.00005	0.0003	04/06/13 0:20	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:15	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:20	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:09	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:37	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 22:41	aeb
Iron, total	M200.7 ICP	0.04	B	*	mg/L	0.02	0.05	04/06/13 6:37	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:15	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:20	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/03/13 22:41	aeb
Lithium, total	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/06/13 6:37	aeb
Magnesium, dissolved	M200.7 ICP	7.5			mg/L	0.2	1	04/03/13 22:41	aeb
Magnesium, total	M200.7 ICP	7.3			mg/L	0.2	1	04/06/13 6:37	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0005	B	*	mg/L	0.0005	0.003	04/05/13 20:15	msh
Manganese, total	M200.8 ICP-MS	0.0010	B		mg/L	0.0005	0.003	04/06/13 0:20	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:30	scp
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 12:33	scp
Molybdenum, dissolved	M200.8 ICP-MS	0.0038			mg/L	0.0005	0.003	04/05/13 20:15	msh
Molybdenum, total	M200.8 ICP-MS	0.0040			mg/L	0.0005	0.003	04/06/13 0:20	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:15	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:20	pmc
Potassium, dissolved	M200.7 ICP	6.3			mg/L	0.3	2	04/03/13 22:41	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59772 DUPLICATE

ACZ Sample ID: ***L11353-05***
Date Sampled: *03/18/13 13:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	6.1			mg/L	0.3	2	04/06/13 6:37	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:41	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:37	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0031			mg/L	0.0001	0.0003	04/05/13 20:15	msh
Selenium, total	M200.8 ICP-MS	0.0027			mg/L	0.0001	0.0003	04/06/13 0:20	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:15	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:20	pmc
Sodium, dissolved	M200.7 ICP	27.6		*	mg/L	0.3	2	04/03/13 22:41	aeb
Sodium, total	M200.7 ICP	26.2			mg/L	0.3	2	04/06/13 6:37	aeb
Strontium, dissolved	M200.7 ICP	0.21		*	mg/L	0.01	0.05	04/03/13 22:41	aeb
Strontium, total	M200.7 ICP	0.20			mg/L	0.01	0.05	04/06/13 6:37	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:15	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:20	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:15	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 0:20	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:41	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:37	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0183			mg/L	0.0002	0.001	04/05/13 20:15	msh
Vanadium, total	M200.8 ICP-MS	0.0183			mg/L	0.0002	0.001	04/06/13 0:20	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 22:41	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 6:37	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	131			mg/L	1	7	04/15/13 15:46	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:09	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	04/09/13 18:41	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59761

ACZ Sample ID: ***L11353-06***
Date Sampled: *03/18/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:13	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:48	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:24	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59761

ACZ Sample ID: ***L11353-06***
Date Sampled: *03/18/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 22:45	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:40	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:19	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 0:30	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0246		*	mg/L	0.0002	0.001	04/05/13 20:19	msh
Arsenic, total	M200.8 ICP-MS	0.0241			mg/L	0.0002	0.001	04/06/13 0:30	pmc
Barium, dissolved	M200.7 ICP	0.048			mg/L	0.003	0.02	04/03/13 22:45	aeb
Barium, total	M200.7 ICP	0.043			mg/L	0.003	0.02	04/06/13 6:40	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:19	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:30	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 22:45	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 13:48	aeb
Boron, dissolved	M200.8 ICP-MS	0.068		*	mg/L	0.005	0.01	04/08/13 17:33	msh
Boron, total	M200.8 ICP-MS	0.07		*	mg/L	0.01	0.02	04/08/13 21:57	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:19	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:30	pmc
Calcium, dissolved	M200.7 ICP	42.9		*	mg/L	0.2	1	04/03/13 22:45	aeb
Calcium, total	M200.7 ICP	44.0			mg/L	0.2	1	04/06/13 6:40	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0010	B		mg/L	0.0005	0.002	04/05/13 20:19	msh
Chromium, total	M200.8 ICP-MS	0.0011	B		mg/L	0.0005	0.002	04/06/13 0:30	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00023	B		mg/L	0.00005	0.0003	04/05/13 20:19	msh
Cobalt, total	M200.8 ICP-MS	0.00006	B		mg/L	0.00005	0.0003	04/06/13 0:30	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:19	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:30	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:12	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:40	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 22:45	aeb
Iron, total	M200.7 ICP		U	*	mg/L	0.02	0.05	04/06/13 6:40	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:19	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:30	pmc
Lithium, dissolved	M200.7 ICP	0.03	B		mg/L	0.02	0.1	04/03/13 22:45	aeb
Lithium, total	M200.7 ICP	0.03	B		mg/L	0.02	0.1	04/06/13 6:40	aeb
Magnesium, dissolved	M200.7 ICP	10.7			mg/L	0.2	1	04/03/13 22:45	aeb
Magnesium, total	M200.7 ICP	10.9			mg/L	0.2	1	04/06/13 6:40	aeb
Manganese, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0005	0.003	04/05/13 20:19	msh
Manganese, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.003	04/06/13 0:30	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:36	scp
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 12:40	scp
Molybdenum, dissolved	M200.8 ICP-MS	0.0025	B		mg/L	0.0005	0.003	04/05/13 20:19	msh
Molybdenum, total	M200.8 ICP-MS	0.0028	B		mg/L	0.0005	0.003	04/06/13 0:30	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:19	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:30	pmc
Potassium, dissolved	M200.7 ICP	6.4			mg/L	0.3	2	04/03/13 22:45	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59761

ACZ Sample ID: ***L11353-06***
Date Sampled: *03/18/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	6.1			mg/L	0.3	2	04/06/13 6:40	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:45	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:40	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0017			mg/L	0.0001	0.0003	04/05/13 20:19	msh
Selenium, total	M200.8 ICP-MS	0.0015			mg/L	0.0001	0.0003	04/06/13 0:30	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:19	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:30	pmc
Sodium, dissolved	M200.7 ICP	25.7		*	mg/L	0.3	2	04/03/13 22:45	aeb
Sodium, total	M200.7 ICP	24.8			mg/L	0.3	2	04/06/13 6:40	aeb
Strontium, dissolved	M200.7 ICP	0.23		*	mg/L	0.01	0.05	04/03/13 22:45	aeb
Strontium, total	M200.7 ICP	0.23			mg/L	0.01	0.05	04/06/13 6:40	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:19	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:30	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:19	msh
Tin, total	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0005	04/06/13 0:30	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:45	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:40	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0199			mg/L	0.0002	0.001	04/05/13 20:19	msh
Vanadium, total	M200.8 ICP-MS	0.0211			mg/L	0.0002	0.001	04/06/13 0:30	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 22:45	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 6:40	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	151			mg/L	1	7	04/15/13 15:47	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:34	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/09/13 18:42	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER TRIP BLANK

ACZ Sample ID: ***L11353-07***
Date Sampled: *03/18/13 17:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/12/13 10:20	scp

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11353***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341373													
WG341373PBW1	PBW	04/01/13 16:36				4.5	mg/L		-20	20			
WG341373LCSW2	LCSW	04/01/13 16:50	WC130328-	820		757.6	mg/L	92.4	90	110			
L11353-03DUP	DUP	04/01/13 19:47			37	38.1	mg/L				2.9	20	
WG341373LCSW5	LCSW	04/01/13 20:01	WC130328-	820		776.5	mg/L	94.7	90	110			
WG341373PBW2	PBW	04/01/13 20:10				3.2	mg/L		-20	20			
WG341373LCSW8	LCSW	04/01/13 21:46	WC130328-	820		781.1	mg/L	95.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.978	mg/L	98.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.09	0.09			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.105	mg/L	110.5	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	1.11	2.069	mg/L	95.9	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	1.11	2.086	mg/L	97.6	85	115	0.82	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.037	mg/L	101.9	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.09	0.09			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.066	0.066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.02	mg/L	102	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	.03	1.083	mg/L	105.3	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	.03	1.089	mg/L	105.9	70	130	0.55	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02		.02077	mg/L	103.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0012	0.0012			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01		.00983	mg/L	98.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.01	.0008	.01026	mg/L	94.6	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.01	.0008	.01025	mg/L	94.5	70	130	0.1	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02		.02	mg/L	100	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0012	0.0012			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00088	0.00088			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.01		.01072	mg/L	107.2	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.01	.0004	.01072	mg/L	103.2	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.01	.0004	.01066	mg/L	102.6	70	130	0.56	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05207	mg/L	104.1	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04869	mg/L	97.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	3.58	3.542	mg/L	-75.9	70	130			M3
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	3.58	3.536	mg/L	-87.9	70	130	0.17	20	M3
WG341712													
WG341712ICV	ICV	04/08/13 17:01	MS130402-2	.05		.05276	mg/L	105.5	90	110			
WG341712ICB	ICB	04/08/13 17:04				U	mg/L		-0.0006	0.0006			
WG341712LFB1	LFB	04/08/13 17:08	MS130329-1	.05005		.04658	mg/L	93.1	85	115			
L11353-01AS	AS	04/08/13 17:14	MS130329-1	2.5025	1.46	3.655	mg/L	87.7	70	130			
L11353-01ASD	ASD	04/08/13 17:17	MS130329-1	2.5025	1.46	3.595	mg/L	85.3	70	130	1.66	20	
WG341712LFB2	LFB	04/08/13 18:42	MS130329-1	.05005		.04706	mg/L	94	85	115			

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05059	mg/L	101.2	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0006	0.0006			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00044	0.00044			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.05294	mg/L	105.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0331	.08668	mg/L	107.1	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0331	.08715	mg/L	108	70	130	0.54	20	
WG341736													
WG341736ICV	ICV	04/08/13 21:33	MS130402-2	.05		.05021	mg/L	100.4	90	110			
WG341736ICB	ICB	04/08/13 21:36				U	mg/L		-0.0006	0.0006			
WG341531LRB	LRB	04/08/13 21:39				U	mg/L		-0.00044	0.00044			
WG341531LFB	LFB	04/08/13 21:41	MS130329-1	.05005		.05473	mg/L	109.4	85	115			
L11355-02LFM	LFM	04/08/13 22:11	MS130329-1	.05005	.034	.0825	mg/L	96.9	70	130			
L11355-02LFMD	LFMD	04/08/13 22:13	MS130329-1	.05005	.034	.0826	mg/L	97.1	70	130	0.12	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.9599	mg/L	98	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0065	mg/L		-0.009	0.009			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.5033	mg/L	100.7	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	.254	.7526	mg/L	99.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	.254	.7592	mg/L	101	85	115	0.87	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9622	mg/L	98.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.009	0.009			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.0066	0.0066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.4846	mg/L	96.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	.082	.5742	mg/L	98.4	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	.082	.5699	mg/L	97.6	70	130	0.75	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04983	mg/L	99.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04832	mg/L	96.4	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.03682	mg/L	73.5	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.03567	mg/L	71.2	70	130	3.17	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04745	mg/L	94.9	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.04849	mg/L	96.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	U	.04551	mg/L	90.8	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	U	.04665	mg/L	93.1	70	130	2.47	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.008	mg/L	100.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.12	0.12			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.064	mg/L	106.4	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	U	1	mg/L	100	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	U	1.028	mg/L	102.8	85	115	2.76	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341676													
WG341676ICV	ICV	04/08/13 13:07	II130114-4	2		1.996	mg/L	99.8	95	105			
WG341676ICB	ICB	04/08/13 13:11				U	mg/L		-0.12	0.12			
WG341599LRB	LRB	04/08/13 13:23				U	mg/L		-0.088	0.088			
WG341599LFB	LFB	04/08/13 13:26	II130326-2	1		1.051	mg/L	105.1	85	115			
L11353-03LFM	LFM	04/08/13 13:36	II130326-2	1	U	1.075	mg/L	107.5	70	130			
L11353-03LFMD	LFMD	04/08/13 13:39	II130326-2	1	U	1.037	mg/L	103.7	70	130	3.6	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Boron, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341712													
WG341712ICV	ICV	04/08/13 17:01	MS130402-2	.02		.02015	mg/L	100.8	90	110			
WG341712ICB	ICB	04/08/13 17:04				U	mg/L		-0.0015	0.0015			
WG341712LFB1	LFB	04/08/13 17:08	MS130329-1	.01001		.00986	mg/L	98.5	85	115			
L11353-01AS	AS	04/08/13 17:14	MS130329-1	.5005	.66	1.119	mg/L	91.7	70	130			
L11353-01ASD	ASD	04/08/13 17:17	MS130329-1	.5005	.66	1.108	mg/L	89.5	70	130	0.99	20	
WG341712LFB2	LFB	04/08/13 18:42	MS130329-1	.01001		.01002	mg/L	100.1	85	115			

Boron, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341736													
WG341736ICV	ICV	04/08/13 21:33	MS130402-2	.02		.0195	mg/L	97.5	90	110			
WG341736ICB	ICB	04/08/13 21:36				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/08/13 21:39				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/08/13 21:41	MS130329-1	.01001		.0095	mg/L	94.9	85	115			
L11355-02LFM	LFM	04/08/13 22:11	MS130329-1	.01001	.07	.081	mg/L	109.9	70	130			
L11355-02LFMD	LFMD	04/08/13 22:13	MS130329-1	.01001	.07	.08	mg/L	99.9	70	130	1.24	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05092	mg/L	101.8	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.0479	mg/L	95.6	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.04615	mg/L	92.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.04465	mg/L	89.1	70	130	3.3	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.0504	mg/L	100.8	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.04996	mg/L	99.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	U	.04897	mg/L	97.7	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	U	.04877	mg/L	97.3	70	130	0.41	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.36	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.26	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	67.95918		73.62	mg/L	108.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	67.95918	308	361.2	mg/L	78.3	85	115			M3
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	67.95918	308	358.26	mg/L	74	85	115	0.82	20	M3

SPF Water Engineering

ACZ Project ID: ***L11353***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		98.44	mg/L	98.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	67.95918		71.19	mg/L	104.8	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	67.95918	185	258.9	mg/L	108.7	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	67.95918	185	257.8	mg/L	107.1	70	130	0.43	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04865	mg/L	97.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.047	mg/L	93.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04486	mg/L	89.6	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04483	mg/L	89.6	70	130	0.07	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04897	mg/L	97.9	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04851	mg/L	96.9	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.001	.05031	mg/L	98.5	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.001	.05027	mg/L	98.4	70	130	0.08	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05064	mg/L	101.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04932	mg/L	98.5	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	.06557	.109	mg/L	86.8	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	.06557	.1052	mg/L	79.2	70	130	3.55	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04928	mg/L	98.6	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04892	mg/L	97.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.00009	.04811	mg/L	95.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.00009	.0468	mg/L	93.3	70	130	2.76	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04843	mg/L	96.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0462	mg/L	92.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.03961	mg/L	79.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.03928	mg/L	78.5	70	130	0.84	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04987	mg/L	99.7	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04991	mg/L	99.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.05049	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.05057	mg/L	101	70	130	0.16	20	

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341537													
WG341537ICV	ICV	04/06/13 1:35	II130114-3	2		2.01	mg/L	100.5	95	105			
WG341537ICB	ICB	04/06/13 1:41				U	mg/L		-0.3	0.3			
WG341537LFB	LFB	04/06/13 1:54	II130326-2	1		.94	mg/L	94	85	115			
L11353-01AS	AS	04/06/13 2:00	II130326-2	1	U	1	mg/L	100	85	115			
L11353-01ASD	ASD	04/06/13 2:03	II130326-2	1	U	1.04	mg/L	104	85	115	3.92	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.07	mg/L	103.5	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.03	mg/L	103	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	U	1.05	mg/L	105	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	U	1.08	mg/L	108	70	130	2.82	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.061	mg/L	103.1	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.137	mg/L	113.7	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	.04	1.077	mg/L	103.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	.04	1.081	mg/L	104.1	85	115	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.021	mg/L	102.1	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	130	130	mg/L	100	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	130	129.3	mg/L	30	70	130	0.54	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04931	mg/L	98.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04579	mg/L	91.5	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04818	mg/L	96.3	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.0464	mg/L	92.7	70	130	3.76	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05164	mg/L	103.3	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04895	mg/L	97.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0003	.05037	mg/L	100	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0003	.05062	mg/L	100.5	70	130	0.5	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.998	mg/L	99.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.014	mg/L	101.4	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	.08	1.127	mg/L	104.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	.08	1.137	mg/L	105.7	85	115	0.88	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.974	mg/L	97.4	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	.76	1.781	mg/L	102.1	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	.76	1.767	mg/L	100.7	70	130	0.79	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		103.39	mg/L	103.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.2	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	49.99941		53.64	mg/L	107.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	49.99941	U	56.5	mg/L	113	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	49.99941	U	56.19	mg/L	112.4	85	115	0.55	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		100.67	mg/L	100.7	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	49.99941		51.43	mg/L	102.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	49.99941	8.8	60.68	mg/L	103.8	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	49.99941	8.8	60.47	mg/L	103.3	70	130	0.35	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05183	mg/L	103.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04914	mg/L	98.2	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	1.15	1.194	mg/L	87.9	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	1.15	1.161	mg/L	22	70	130	2.8	20	M3
WG341712													
WG341712ICV	ICV	04/08/13 17:01	MS130402-2	.05		.05204	mg/L	104.1	90	110			
WG341712ICB	ICB	04/08/13 17:04				U	mg/L		-0.0015	0.0015			
WG341712LFB1	LFB	04/08/13 17:08	MS130329-1	.05005		.05236	mg/L	104.6	85	115			
L11353-01AS	AS	04/08/13 17:14	MS130329-1	2.5025	.57	3.049	mg/L	99.1	70	130			
L11353-01ASD	ASD	04/08/13 17:17	MS130329-1	2.5025	.57	3.021	mg/L	97.9	70	130	0.92	20	
WG341712LFB2	LFB	04/08/13 18:42	MS130329-1	.05005		.05345	mg/L	106.8	85	115			

SPF Water Engineering

ACZ Project ID: ***L11353***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05111	mg/L	102.2	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04882	mg/L	97.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.035	.08452	mg/L	98.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.035	.0832	mg/L	96.3	70	130	1.57	20	
WG341736													
WG341736ICV	ICV	04/08/13 21:33	MS130402-2	.05		.05043	mg/L	100.9	90	110			
WG341736ICB	ICB	04/08/13 21:36				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/08/13 21:39				.00055	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/08/13 21:41	MS130329-1	.05005		.04881	mg/L	97.5	85	115			
L11355-02LFM	LFM	04/08/13 22:11	MS130329-1	.05005	.02	.068	mg/L	95.9	70	130			
L11355-02LFMD	LFMD	04/08/13 22:13	MS130329-1	.05005	.02	.077	mg/L	113.9	70	130	12.41	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341924													
WG341924ICV	ICV	04/12/13 9:57	HG130219-7	5		4.91	ng/L	98.2	79	121			
WG341924ICB	ICB	04/12/13 10:03				U	ng/L		-0.5	0.5			
WG341971													
WG341971CCV1	CCV	04/12/13 13:23	HG130219-7	5		5.04	ng/L	100.8	76.5	123.4			
WG341971CCB1	CCB	04/12/13 13:30				U	ng/L		-0.5	0.5			
WG341971LFB	LFB	04/12/13 13:36	HG130219-8	2		2.03	ng/L	101.5	71	125			
L11353-01MS	MS	04/12/13 13:56	HG5XPREP	50	U	10.8	ng/L	108	71	125			
L11353-01MSD	MSD	04/12/13 14:03	HG5XPREP	50	U	10.8	ng/L	108	71	125	0	24	
WG341971CCV2	CCV	04/12/13 14:16	HG130219-7	5		5.12	ng/L	102.4	76.5	123.4			
WG341971CCB2	CCB	04/12/13 14:23				U	ng/L		-0.5	0.5			
WG341433PBW	PBW	04/12/13 15:10				U	ng/L		-0.5	0.5			
WG341971CCV3	CCV	04/12/13 15:16	HG130219-7	5		5.02	ng/L	100.4	76.5	123.4			
WG341971CCB3	CCB	04/12/13 15:23				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341924													
WG341924ICV	ICV	04/12/13 9:57	HG130219-7	5		4.91	ng/L	98.2	79	121			
WG341924ICB	ICB	04/12/13 10:03				U	ng/L		-0.5	0.5			
WG341924LFB	LFB	04/12/13 10:10	HG130219-8	2		1.95	ng/L	97.5	71	125			
L11400-02MS	MS	04/12/13 11:07	HG5XPREP	50	3	12.7	ng/L	97	71	125			
L11400-02MSD	MSD	04/12/13 11:13	HG5XPREP	50	3	12.8	ng/L	98	71	125	0.78	24	
WG341924CCV1	CCV	04/12/13 11:20	HG130219-7	5		5.03	ng/L	100.6	76.5	123.4			
WG341924CCB1	CCB	04/12/13 11:27				U	ng/L		-0.5	0.5			
L11439-01MS	MS	04/12/13 11:53	HG5XPREP	50	2	11.9	ng/L	99	71	125			
L11439-01MSD	MSD	04/12/13 12:00	HG5XPREP	50	2	11.9	ng/L	99	71	125	0	24	
WG341924CCV2	CCV	04/12/13 12:07	HG130219-7	5		5.13	ng/L	102.6	76.5	123.4			
WG341924CCB2	CCB	04/12/13 12:13				U	ng/L		-0.5	0.5			
WG341924CCV3	CCV	04/12/13 13:23	HG130219-7	5		5.04	ng/L	100.8	76.5	123.4			
WG341924CCB3	CCB	04/12/13 13:30				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L11353***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02004		.01896	mg/L	94.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05		.04597	mg/L	91.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05	.0017	.0508	mg/L	98.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05	.0017	.04911	mg/L	94.8	70	130	3.38	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02004		.02006	mg/L	100.1	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05		.04968	mg/L	99.4	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05	.0047	.05463	mg/L	99.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05	.0047	.05482	mg/L	100.2	70	130	0.35	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05024	mg/L	100.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0018	0.0018			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04686	mg/L	93.6	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	.0501	.09032	mg/L	80.4	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	.0501	.0904	mg/L	80.5	70	130	0.09	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05091	mg/L	101.8	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0018	0.0018			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00132	0.00132			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04952	mg/L	98.9	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.04973	mg/L	99.4	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.04994	mg/L	99.8	70	130	0.42	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341704													
WG341704ICV	ICV	04/08/13 12:53	WI121105-5	1.003		1.006	mg/L	100.3	90	110			
WG341704ICB	ICB	04/08/13 12:56				U	mg/L		-0.15	0.15			
WG341715													
WG341715LFB1	LFB	04/08/13 15:21	WI121218-3	1		1.025	mg/L	102.5	90	110			
L11279-01AS	AS	04/08/13 15:24	WI121218-3	1	.16	1.171	mg/L	101.1	90	110			
L11279-02DUP	DUP	04/08/13 15:26			.16	.16	mg/L				0	20	RA
WG341715LFB2	LFB	04/08/13 15:53	WI121218-3	1		.947	mg/L	94.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L11353***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341806													
WG341806ICV	ICV	04/09/13 18:30	WI130404-1	.65228		.637	mg/L	97.7	90	110			
WG341806ICB	ICB	04/09/13 18:33				U	mg/L		-0.03	0.03			
WG341752LRB	LRB	04/09/13 18:34				U	mg/L		-0.03	0.03			
WG341752LFB	LFB	04/09/13 18:35	WI130403-2	.5		.491	mg/L	98.2	90	110			
L11353-04DUP	DUP	04/09/13 18:40			.02	.023	mg/L				14	20	RA
L11353-01LFM	LFM	04/09/13 21:50	WI130403-2	.5	.48	1.033	mg/L	110.6	90	110			M1

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	20		20.13	mg/L	100.7	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	99.97161		105.26	mg/L	105.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	99.97161	61.9	166.68	mg/L	104.8	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	99.97161	61.9	169.28	mg/L	107.4	85	115	1.55	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	20		19.82	mg/L	99.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	99.97161		100.4	mg/L	100.4	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	99.97161	6.3	109.5	mg/L	103.2	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	99.97161	6.3	109.1	mg/L	102.8	70	130	0.37	20	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.3	0.3			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1.0009		1.05	mg/L	104.9	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.96	mg/L	98	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1.0009		1.04	mg/L	103.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1.0009	U	1.03	mg/L	102.9	70	130	0.97	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05427	mg/L	108.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04807	mg/L	96	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.05914	mg/L	118.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.05668	mg/L	113.2	70	130	4.25	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05104	mg/L	102.1	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.05232	mg/L	104.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0043	.05501	mg/L	101.3	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0043	.05469	mg/L	100.7	70	130	0.58	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02006		.02035	mg/L	101.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01001		.009423	mg/L	94.1	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.01001	U	.005196	mg/L	51.9	70	130			M2 ZA
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.01001	U	.005532	mg/L	55.3	70	130	6.26	20	M2 ZA

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02006		.02076	mg/L	103.5	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.01001		.01007	mg/L	100.6	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.01001	U	.00966	mg/L	96.5	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.01001	U	.009612	mg/L	96	70	130	0.5	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.35	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.49	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	100.0416		104.33	mg/L	104.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	100.0416	243	332.61	mg/L	89.6	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	100.0416	243	334.56	mg/L	91.5	85	115	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		99.84	mg/L	99.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	100.0416		99.38	mg/L	99.3	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	100.0416	320	422.6	mg/L	102.6	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	100.0416	320	428.2	mg/L	108.2	70	130	1.32	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.971	mg/L	98.6	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.51	mg/L	102	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	2.22	2.637	mg/L	83.4	85	115			M3
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	2.22	2.652	mg/L	86.4	85	115	0.57	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.971	mg/L	98.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.49	mg/L	98	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	4.12	4.572	mg/L	90.4	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	4.12	4.605	mg/L	97	70	130	0.72	20	

Sulfate D516-02 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341644													
WG341644ICB	ICB	04/05/13 12:45				U	mg/L		-3	3			
WG341644ICV	ICV	04/05/13 12:45	WI130401-1	20		20.1	mg/L	100.5	90	110			
L11176-01DUP	DUP	04/05/13 15:37			182	181.6	mg/L				0.2	20	
WG341644LFB	LFB	04/05/13 16:17	WI121025-3	10		10.4	mg/L	104	90	110			
L11176-02AS	AS	04/05/13 16:18	SO4TURB5	10	88	98.8	mg/L	108	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05047	mg/L	100.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0467	mg/L	93.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04916	mg/L	98.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04767	mg/L	95.2	70	130	3.08	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05249	mg/L	105	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04929	mg/L	98.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.05052	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.05083	mg/L	101.6	70	130	0.61	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05005		.04775	mg/L	95.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04544	mg/L	90.8	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04559	mg/L	91.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04452	mg/L	89	70	130	2.37	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.0502	mg/L	100.4	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04918	mg/L	98.3	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.04603	mg/L	92	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.04407	mg/L	88.1	70	130	4.35	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.0241	mg/L	101.2	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0059	mg/L		-0.015	0.015			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.0204	mg/L	102	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	U	1.0281	mg/L	102.8	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	U	1.0401	mg/L	104	85	115	1.16	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9565	mg/L	97.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.015	0.015			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.011	0.011			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.9926	mg/L	99.3	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	U	.9994	mg/L	99.9	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	U	.9986	mg/L	99.9	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04851	mg/L	97	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04753	mg/L	94.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.04829	mg/L	96.4	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.04833	mg/L	96.5	70	130	0.08	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04831	mg/L	96.6	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0006	0.0006			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00044	0.00044			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.049	mg/L	97.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	.0109	.06146	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	.0109	.06156	mg/L	101.1	70	130	0.16	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.999	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.526	mg/L	105.2	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	U	.537	mg/L	107.4	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	U	.54	mg/L	108	85	115	0.56	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.987	mg/L	99.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.516	mg/L	103.2	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	.44	.954	mg/L	102.8	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	.44	.942	mg/L	100.4	70	130	1.27	20	

SPF Water Engineering

ACZ Project ID: ***L11353***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11353-01	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341924	Mercury, total	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11353-02	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341373	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L11353-03	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341373	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering ACZ Project ID: ***L11353***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11353-04	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341627	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341924	Mercury, total	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L11353***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11353-05	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341627	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341924	Mercury, total	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L11353***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11353-06	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341627	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341924	Mercury, total	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Boron, dissolved	M200.8 ICP-MS
Boron, total	M200.8 ICP-MS
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
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Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11353
Date Received: 04/01/2013 09:49
Received By: ksj
Date Printed: 4/1/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3110	4.2	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11353

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW & SPF-2013-GW-SHORT
PO#: Calico Winter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW	SPF-2013-GW-SHORT
BLM	3/18/13 15:42		5	X	
BLM 6 VOLS	3/18/13 16:00		4		X
BLM 12 VOLS	3/18/13 16:30		4		X
59772	3/18/13 13:35		5	X	
59772 Duplicate	3/18/13 13:50		5	X	
59761	3/18/13 12:15		5	X	
Transfer Trip Blank	3/18/13 17:35				

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed, for both SPF-2013-GW and SPF-2013-GW-SHORT.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/28/13 16:00		4.1.13 9:49

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11353 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 11, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11354

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 01, 2013. This project has been assigned to ACZ's project number, L11354. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11354. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 11, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GOVERNMENT CORRAL SPRINGS

ACZ Sample ID: ***L11354-01***
Date Sampled: *03/13/13 11:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/13 17:15	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:36	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 10:24	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GOVERNMENT CORRAL SPRINGS

ACZ Sample ID: ***L11354-01***
Date Sampled: *03/13/13 11:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 22:48	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:50	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 19:00	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:34	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0079			mg/L	0.0002	0.001	04/05/13 19:00	msh
Arsenic, total	M200.8 ICP-MS	0.0078			mg/L	0.0002	0.001	04/06/13 1:34	pmc
Barium, dissolved	M200.7 ICP	0.032			mg/L	0.003	0.02	04/03/13 22:48	aeb
Barium, total	M200.7 ICP	0.028			mg/L	0.003	0.02	04/06/13 6:50	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:00	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:34	pmc
Bismuth, dissolved	M200.7 ICP	0.05	B	*	mg/L	0.04	0.2	04/03/13 22:48	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 13:51	aeb
Boron, dissolved	M200.8 ICP-MS	0.053		*	mg/L	0.005	0.01	04/08/13 19:40	msh
Boron, total	M200.8 ICP-MS	0.051		*	mg/L	0.005	0.01	04/08/13 23:13	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:00	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	pmc
Calcium, dissolved	M200.7 ICP	49.3		*	mg/L	0.2	1	04/03/13 22:48	aeb
Calcium, total	M200.7 ICP	49.9			mg/L	0.2	1	04/06/13 6:50	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0011	B		mg/L	0.0005	0.002	04/05/13 19:00	msh
Chromium, total	M200.8 ICP-MS	0.0013	B		mg/L	0.0005	0.002	04/06/13 1:34	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00018	B		mg/L	0.00005	0.0003	04/05/13 19:00	msh
Cobalt, total	M200.8 ICP-MS	0.00008	B		mg/L	0.00005	0.0003	04/06/13 1:34	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:00	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:34	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:15	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:50	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 22:48	aeb
Iron, total	M200.7 ICP		U	*	mg/L	0.02	0.05	04/06/13 6:50	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:00	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 22:48	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/06/13 6:50	aeb
Magnesium, dissolved	M200.7 ICP	14.9			mg/L	0.2	1	04/03/13 22:48	aeb
Magnesium, total	M200.7 ICP	15.2			mg/L	0.2	1	04/06/13 6:50	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:00	msh
Manganese, total	M200.8 ICP-MS	0.0025	B		mg/L	0.0005	0.003	04/06/13 1:34	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 11:35	las
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/05/13 14:15	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0017	B		mg/L	0.0005	0.003	04/05/13 19:00	msh
Molybdenum, total	M200.8 ICP-MS	0.0018	B		mg/L	0.0005	0.003	04/06/13 1:34	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 19:00	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:34	pmc
Potassium, dissolved	M200.7 ICP	4.3			mg/L	0.3	2	04/03/13 22:48	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GOVERNMENT CORRAL SPRINGS

ACZ Sample ID: ***L11354-01***
Date Sampled: *03/13/13 11:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	4.3			mg/L	0.3	2	04/06/13 6:50	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:48	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:50	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0019			mg/L	0.0001	0.0003	04/05/13 19:00	msh
Selenium, total	M200.8 ICP-MS	0.0018			mg/L	0.0001	0.0003	04/06/13 1:34	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:00	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:34	pmc
Sodium, dissolved	M200.7 ICP	20.1		*	mg/L	0.3	2	04/03/13 22:48	aeb
Sodium, total	M200.7 ICP	19.2			mg/L	0.3	2	04/06/13 6:50	aeb
Strontium, dissolved	M200.7 ICP	0.26		*	mg/L	0.01	0.05	04/03/13 22:48	aeb
Strontium, total	M200.7 ICP	0.25			mg/L	0.01	0.05	04/06/13 6:50	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:00	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 19:00	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:34	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:48	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:50	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0187			mg/L	0.0002	0.001	04/05/13 19:00	msh
Vanadium, total	M200.8 ICP-MS	0.0207			mg/L	0.0002	0.001	04/06/13 1:34	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 22:48	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 6:50	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	184			mg/L	1	7	04/11/13 10:13	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 13:43	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/04/13 13:59	bsu

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SOURDOUGH SPRINGS UPPER

ACZ Sample ID: ***L11354-02***
Date Sampled: *03/17/13 11:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:25	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:47	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 10:36	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SOURDOUGH SPRINGS UPPER

ACZ Sample ID: ***L11354-02***
Date Sampled: *03/17/13 11:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 22:51	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:53	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 19:03	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:37	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0279			mg/L	0.0002	0.001	04/05/13 19:03	msh
Arsenic, total	M200.8 ICP-MS	0.0276			mg/L	0.0002	0.001	04/06/13 1:37	pmc
Barium, dissolved	M200.7 ICP	0.069			mg/L	0.003	0.02	04/03/13 22:51	aeb
Barium, total	M200.7 ICP	0.065			mg/L	0.003	0.02	04/06/13 6:53	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:03	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:37	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 22:51	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:00	aeb
Boron, dissolved	M200.8 ICP-MS	0.110		*	mg/L	0.005	0.01	04/08/13 19:43	msh
Boron, total	M200.8 ICP-MS	0.11		*	mg/L	0.03	0.05	04/08/13 23:16	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:03	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:37	pmc
Calcium, dissolved	M200.7 ICP	36.5			mg/L	0.2	1	04/03/13 22:51	aeb
Calcium, total	M200.7 ICP	35.8			mg/L	0.2	1	04/06/13 6:53	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 19:03	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:37	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00018	B		mg/L	0.00005	0.0003	04/05/13 19:03	msh
Cobalt, total	M200.8 ICP-MS	0.00005	B		mg/L	0.00005	0.0003	04/06/13 1:37	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:03	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:37	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:19	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:53	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 22:51	aeb
Iron, total	M200.7 ICP		U	*	mg/L	0.02	0.05	04/06/13 6:53	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:03	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:37	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 22:51	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/06/13 6:53	aeb
Magnesium, dissolved	M200.7 ICP	10.0			mg/L	0.2	1	04/03/13 22:51	aeb
Magnesium, total	M200.7 ICP	9.6			mg/L	0.2	1	04/06/13 6:53	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:03	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:37	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 12:08	las
Mercury, total	M1631, Atomic Fluorescence	0.2	B	*	ng/L	0.2	0.5	04/05/13 14:21	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0005	0.003	04/05/13 19:03	msh
Molybdenum, total	M200.8 ICP-MS	0.0039			mg/L	0.0005	0.003	04/06/13 1:37	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 19:03	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:37	pmc
Potassium, dissolved	M200.7 ICP	4.2			mg/L	0.3	2	04/03/13 22:51	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SOURDOUGH SPRINGS UPPER

ACZ Sample ID: ***L11354-02***
Date Sampled: *03/17/13 11:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	4.1			mg/L	0.3	2	04/06/13 6:53	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 22:51	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:53	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0018			mg/L	0.0001	0.0003	04/05/13 19:03	msh
Selenium, total	M200.8 ICP-MS	0.0017			mg/L	0.0001	0.0003	04/06/13 1:37	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:03	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:37	pmc
Sodium, dissolved	M200.7 ICP	43.4		*	mg/L	0.3	2	04/03/13 22:51	aeb
Sodium, total	M200.7 ICP	41.6			mg/L	0.3	2	04/06/13 6:53	aeb
Strontium, dissolved	M200.7 ICP	0.25			mg/L	0.01	0.05	04/03/13 22:51	aeb
Strontium, total	M200.7 ICP	0.24			mg/L	0.01	0.05	04/06/13 6:53	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:03	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:37	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 19:03	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:37	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 22:51	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:53	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0273			mg/L	0.0002	0.001	04/05/13 19:03	msh
Vanadium, total	M200.8 ICP-MS	0.0302			mg/L	0.0002	0.001	04/06/13 1:37	pmc
Zinc, dissolved	M200.7 ICP	0.08			mg/L	0.01	0.05	04/03/13 22:51	aeb
Zinc, total	M200.7 ICP	0.08			mg/L	0.01	0.05	04/06/13 6:53	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	132			mg/L	1	7	04/11/13 10:13	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 13:44	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	04/09/13 18:43	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L11354-03***
Date Sampled: *03/13/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:38	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 10:48	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 10:59	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L11354-03***
Date Sampled: *03/13/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:02	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 6:56	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 19:07	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:40	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0009	B		mg/L	0.0002	0.001	04/05/13 19:07	msh
Arsenic, total	M200.8 ICP-MS	0.0010			mg/L	0.0002	0.001	04/06/13 1:40	pmc
Barium, dissolved	M200.7 ICP	0.053			mg/L	0.003	0.02	04/03/13 23:02	aeb
Barium, total	M200.7 ICP	0.048			mg/L	0.003	0.02	04/06/13 6:56	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:07	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:40	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:02	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:04	aeb
Boron, dissolved	M200.8 ICP-MS	0.110		*	mg/L	0.005	0.01	04/08/13 19:47	msh
Boron, total	M200.8 ICP-MS	0.11		*	mg/L	0.03	0.05	04/08/13 23:18	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:07	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:40	pmc
Calcium, dissolved	M200.7 ICP	59.4			mg/L	0.2	1	04/03/13 23:02	aeb
Calcium, total	M200.7 ICP	57.0			mg/L	0.2	1	04/06/13 6:56	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 19:07	msh
Chromium, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0005	0.002	04/06/13 1:40	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00022	B		mg/L	0.00005	0.0003	04/05/13 19:07	msh
Cobalt, total	M200.8 ICP-MS	0.00012	B		mg/L	0.00005	0.0003	04/06/13 1:40	pmc
Copper, dissolved	M200.8 ICP-MS	0.0013	B		mg/L	0.0005	0.003	04/05/13 19:07	msh
Copper, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.003	04/06/13 1:40	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:22	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:56	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:02	aeb
Iron, total	M200.7 ICP		U	*	mg/L	0.02	0.05	04/06/13 6:56	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:07	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:40	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/03/13 23:02	aeb
Lithium, total	M200.7 ICP	0.03	B		mg/L	0.02	0.1	04/06/13 6:56	aeb
Magnesium, dissolved	M200.7 ICP	29.9			mg/L	0.2	1	04/03/13 23:02	aeb
Magnesium, total	M200.7 ICP	28.6			mg/L	0.2	1	04/06/13 6:56	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:07	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:40	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	0.6	B	*	ng/L	0.4	1	04/10/13 12:15	las
Mercury, total	M1631, Atomic Fluorescence	0.7		*	ng/L	0.2	0.5	04/05/13 14:28	las
Molybdenum, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:07	msh
Molybdenum, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:40	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 19:07	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:40	pmc
Potassium, dissolved	M200.7 ICP	1.0	B		mg/L	0.3	2	04/03/13 23:02	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L11354-03***
Date Sampled: *03/13/13 12:15*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP		U		mg/L	0.3	2	04/06/13 6:56	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:02	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:56	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0024			mg/L	0.0001	0.0003	04/05/13 19:07	msh
Selenium, total	M200.8 ICP-MS	0.0022			mg/L	0.0001	0.0003	04/06/13 1:40	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:07	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:40	pmc
Sodium, dissolved	M200.7 ICP	122		*	mg/L	0.3	2	04/03/13 23:02	aeb
Sodium, total	M200.7 ICP	120			mg/L	0.3	2	04/06/13 6:56	aeb
Strontium, dissolved	M200.7 ICP	0.22			mg/L	0.01	0.05	04/03/13 23:02	aeb
Strontium, total	M200.7 ICP	0.22			mg/L	0.01	0.05	04/06/13 6:56	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:07	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:40	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 19:07	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:40	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:02	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 6:56	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0055			mg/L	0.0002	0.001	04/05/13 19:07	msh
Vanadium, total	M200.8 ICP-MS	0.0064			mg/L	0.0002	0.001	04/06/13 1:40	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:02	aeb
Zinc, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/06/13 6:56	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	271			mg/L	1	7	04/11/13 10:13	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:35	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01	B	*	mg/L	0.01	0.05	04/09/13 18:44	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59763

ACZ Sample ID: ***L11354-04***
Date Sampled: *03/18/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:51	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 11:10	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 11:00	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59763

ACZ Sample ID: ***L11354-04***
Date Sampled: *03/18/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:05	aeb
Aluminum, total	M200.7 ICP	2.07			mg/L	0.03	0.2	04/06/13 6:59	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	04/05/13 19:10	msh
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	04/06/13 1:44	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0839			mg/L	0.0002	0.001	04/05/13 19:10	msh
Arsenic, total	M200.8 ICP-MS	0.0787			mg/L	0.0002	0.001	04/06/13 1:44	pmc
Barium, dissolved	M200.7 ICP	0.024			mg/L	0.003	0.02	04/03/13 23:05	aeb
Barium, total	M200.7 ICP	0.056			mg/L	0.003	0.02	04/06/13 6:59	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:10	msh
Beryllium, total	M200.8 ICP-MS	0.00012	B		mg/L	0.00005	0.0003	04/06/13 1:44	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:05	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:07	aeb
Boron, dissolved	M200.8 ICP-MS	0.151		*	mg/L	0.005	0.01	04/08/13 19:50	msh
Boron, total	M200.8 ICP-MS	0.15		*	mg/L	0.03	0.05	04/08/13 23:21	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:10	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:44	pmc
Calcium, dissolved	M200.7 ICP	52.7			mg/L	0.2	1	04/03/13 23:05	aeb
Calcium, total	M200.7 ICP	48.4			mg/L	0.2	1	04/06/13 6:59	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 19:10	msh
Chromium, total	M200.8 ICP-MS	0.0015	B		mg/L	0.0005	0.002	04/06/13 1:44	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00033			mg/L	0.00005	0.0003	04/05/13 19:10	msh
Cobalt, total	M200.8 ICP-MS	0.00132			mg/L	0.00005	0.0003	04/06/13 1:44	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:10	msh
Copper, total	M200.8 ICP-MS	0.0030			mg/L	0.0005	0.003	04/06/13 1:44	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:31	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:59	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:05	aeb
Iron, total	M200.7 ICP	1.45		*	mg/L	0.02	0.05	04/06/13 6:59	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:10	msh
Lead, total	M200.8 ICP-MS	0.0013			mg/L	0.0001	0.0005	04/06/13 1:44	pmc
Lithium, dissolved	M200.7 ICP	0.19			mg/L	0.02	0.1	04/03/13 23:05	aeb
Lithium, total	M200.7 ICP	0.18			mg/L	0.02	0.1	04/06/13 6:59	aeb
Magnesium, dissolved	M200.7 ICP	5.9			mg/L	0.2	1	04/03/13 23:05	aeb
Magnesium, total	M200.7 ICP	5.2			mg/L	0.2	1	04/06/13 6:59	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0286			mg/L	0.0005	0.003	04/05/13 19:10	msh
Manganese, total	M200.8 ICP-MS	0.23			mg/L	0.03	0.1	04/08/13 23:21	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 12:22	las
Mercury, total	M1631, Atomic Fluorescence	1.8		*	ng/L	0.4	1	04/05/13 14:35	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0120			mg/L	0.0005	0.003	04/05/13 19:10	msh
Molybdenum, total	M200.8 ICP-MS	0.0138			mg/L	0.0005	0.003	04/06/13 1:44	pmc
Nickel, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0006	0.003	04/05/13 19:10	msh
Nickel, total	M200.8 ICP-MS	0.0071			mg/L	0.0006	0.003	04/06/13 1:44	pmc
Potassium, dissolved	M200.7 ICP	26.6			mg/L	0.3	2	04/03/13 23:05	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59763

ACZ Sample ID: ***L11354-04***
Date Sampled: *03/18/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	25.8			mg/L	0.3	2	04/06/13 6:59	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:05	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 6:59	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0009			mg/L	0.0001	0.0003	04/05/13 19:10	msh
Selenium, total	M200.8 ICP-MS	0.0027			mg/L	0.0001	0.0003	04/06/13 1:44	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:10	msh
Silver, total	M200.8 ICP-MS	0.00005	B		mg/L	0.00005	0.0003	04/06/13 1:44	pmc
Sodium, dissolved	M200.7 ICP	285		*	mg/L	0.3	2	04/03/13 23:05	aeb
Sodium, total	M200.7 ICP	286			mg/L	0.3	2	04/06/13 6:59	aeb
Strontium, dissolved	M200.7 ICP	0.15			mg/L	0.01	0.05	04/03/13 23:05	aeb
Strontium, total	M200.7 ICP	0.15			mg/L	0.01	0.05	04/06/13 6:59	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:10	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:44	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 19:10	msh
Tin, total	M200.8 ICP-MS	0.0007		*	mg/L	0.0001	0.0005	04/06/13 1:44	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:05	aeb
Titanium, total	M200.7 ICP	0.057			mg/L	0.005	0.03	04/06/13 6:59	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0026			mg/L	0.0002	0.001	04/05/13 19:10	msh
Vanadium, total	M200.8 ICP-MS	0.0066			mg/L	0.0002	0.001	04/06/13 1:44	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:05	aeb
Zinc, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	04/06/13 6:59	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	156			mg/L	1	7	04/11/13 10:14	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:37	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.08		*	mg/L	0.01	0.05	04/09/13 18:48	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PROD-1

ACZ Sample ID: ***L11354-05***
Date Sampled: *03/17/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 14:03	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 11:22	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 11:12	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PROD-1

ACZ Sample ID: ***L11354-05***
Date Sampled: *03/17/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:09	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 7:02	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 19:13	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:47	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0631			mg/L	0.0002	0.001	04/05/13 19:13	msh
Arsenic, total	M200.8 ICP-MS	0.0610			mg/L	0.0002	0.001	04/06/13 1:47	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	04/03/13 23:09	aeb
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	04/06/13 7:02	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 19:13	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:47	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:09	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:10	aeb
Boron, dissolved	M200.8 ICP-MS	0.099		*	mg/L	0.005	0.01	04/08/13 19:53	msh
Boron, total	M200.8 ICP-MS	0.10		*	mg/L	0.01	0.02	04/08/13 23:24	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:13	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:47	pmc
Calcium, dissolved	M200.7 ICP	12.3			mg/L	0.2	1	04/03/13 23:09	aeb
Calcium, total	M200.7 ICP	12.2			mg/L	0.2	1	04/06/13 7:02	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 19:13	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:47	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00014	B		mg/L	0.00005	0.0003	04/05/13 19:13	msh
Cobalt, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:47	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 19:13	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:47	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:34	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:02	aeb
Iron, dissolved	M200.7 ICP	0.05	B		mg/L	0.02	0.05	04/03/13 23:09	aeb
Iron, total	M200.7 ICP	0.04	B		mg/L	0.02	0.05	04/06/13 7:02	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:13	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:47	pmc
Lithium, dissolved	M200.7 ICP	0.16			mg/L	0.02	0.1	04/03/13 23:09	aeb
Lithium, total	M200.7 ICP	0.16			mg/L	0.02	0.1	04/06/13 7:02	aeb
Magnesium, dissolved	M200.7 ICP	0.2	B		mg/L	0.2	1	04/03/13 23:09	aeb
Magnesium, total	M200.7 ICP	0.3	B		mg/L	0.2	1	04/06/13 7:02	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0450			mg/L	0.0005	0.003	04/05/13 19:13	msh
Manganese, total	M200.8 ICP-MS	0.0492			mg/L	0.0005	0.003	04/06/13 1:47	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 12:29	las
Mercury, total	M1631, Atomic Fluorescence	0.4	B	*	ng/L	0.2	0.5	04/05/13 14:42	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0075			mg/L	0.0005	0.003	04/05/13 19:13	msh
Molybdenum, total	M200.8 ICP-MS	0.0083			mg/L	0.0005	0.003	04/06/13 1:47	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 19:13	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:47	pmc
Potassium, dissolved	M200.7 ICP	1.2	B		mg/L	0.3	2	04/03/13 23:09	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PROD-1

ACZ Sample ID: ***L11354-05***
Date Sampled: *03/17/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	0.6	B		mg/L	0.3	2	04/06/13 7:02	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:09	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:02	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 19:13	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 1:47	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 19:13	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:47	pmc
Sodium, dissolved	M200.7 ICP	139		*	mg/L	0.3	2	04/03/13 23:09	aeb
Sodium, total	M200.7 ICP	137			mg/L	0.3	2	04/06/13 7:02	aeb
Strontium, dissolved	M200.7 ICP	0.04	B		mg/L	0.01	0.05	04/03/13 23:09	aeb
Strontium, total	M200.7 ICP	0.04	B		mg/L	0.01	0.05	04/06/13 7:02	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 19:13	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:47	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 19:13	msh
Tin, total	M200.8 ICP-MS	0.0003	B	*	mg/L	0.0001	0.0005	04/06/13 1:47	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:09	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:02	aeb
Vanadium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/05/13 19:13	msh
Vanadium, total	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/06/13 1:47	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:09	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:02	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	32			mg/L	1	7	04/11/13 10:14	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.07	B	*	mg/L	0.05	0.5	04/08/13 15:38	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	04/09/13 18:49	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER TRIP BLANK

ACZ Sample ID: ***L11354-06***
Date Sampled: *03/17/13 16:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	0.2	0.5	04/05/13 11:56	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11354***

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.978	mg/L	98.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.09	0.09			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.105	mg/L	110.5	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	1.11	2.069	mg/L	95.9	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	1.11	2.086	mg/L	97.6	85	115	0.82	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.054	mg/L	105.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.031	mg/L	103.1	85	115	2.21	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.037	mg/L	101.9	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.09	0.09			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.066	0.066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.02	mg/L	102	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	.03	1.083	mg/L	105.3	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	.03	1.089	mg/L	105.9	70	130	0.55	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.12	1.394	mg/L	127.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.12	1.404	mg/L	128.4	70	130	0.71	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.02		.02068	mg/L	103.4	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0012	0.0012			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.01		.0098	mg/L	98	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.01	U	.0104	mg/L	104	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.01	U	.01033	mg/L	103.3	70	130	0.68	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02		.01982	mg/L	99.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0012	0.0012			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00088	0.00088			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01		.01063	mg/L	106.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.01	.0007	.0112	mg/L	105	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.01	.0007	.01137	mg/L	106.7	70	130	1.51	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05217	mg/L	104.3	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0006	0.0006			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.05014	mg/L	100.2	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	.0029	.05776	mg/L	109.6	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	.0029	.05853	mg/L	111.1	70	130	1.32	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05112	mg/L	102.2	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05261	mg/L	105.1	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	.0874	.1369	mg/L	98.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	.0874	.1372	mg/L	99.5	70	130	0.22	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.9599	mg/L	98	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0065	mg/L		-0.009	0.009			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.5033	mg/L	100.7	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	.254	.7526	mg/L	99.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	.254	.7592	mg/L	101	85	115	0.87	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.069	.5816	mg/L	102.5	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.069	.5811	mg/L	102.4	85	115	0.09	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9622	mg/L	98.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.009	0.009			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.0066	0.0066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.4846	mg/L	96.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	.082	.5742	mg/L	98.4	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	.082	.5699	mg/L	97.6	70	130	0.75	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.052	.5464	mg/L	98.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.052	.5452	mg/L	98.6	70	130	0.22	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.04493	mg/L	89.9	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.00015	0.00015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.0501		.04456	mg/L	88.9	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.0501	U	.0484	mg/L	96.6	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.0501	U	.04874	mg/L	97.3	70	130	0.7	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04815	mg/L	96.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.05027	mg/L	100.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	U	.04927	mg/L	98.3	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	U	.04989	mg/L	99.6	70	130	1.25	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.008	mg/L	100.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.12	0.12			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.064	mg/L	106.4	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	U	1	mg/L	100	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	U	1.028	mg/L	102.8	85	115	2.76	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.062	mg/L	106.2	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.079	mg/L	107.9	85	115	1.59	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341676													
WG341676ICV	ICV	04/08/13 13:07	II130114-4	2		1.996	mg/L	99.8	95	105			
WG341676ICB	ICB	04/08/13 13:11				U	mg/L		-0.12	0.12			
WG341599LRB	LRB	04/08/13 13:23				U	mg/L		-0.088	0.088			
WG341599LFB	LFB	04/08/13 13:26	II130326-2	1		1.051	mg/L	105.1	85	115			
L11353-03LFM	LFM	04/08/13 13:36	II130326-2	1	U	1.075	mg/L	107.5	70	130			
L11353-03LFMD	LFMD	04/08/13 13:39	II130326-2	1	U	1.037	mg/L	103.7	70	130	3.6	20	
L11355-04LFM	LFM	04/08/13 14:25	II130326-2	1	U	1.066	mg/L	106.6	70	130			
L11355-04LFMD	LFMD	04/08/13 14:28	II130326-2	1	U	1.009	mg/L	100.9	70	130	5.49	20	

Boron, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341713													
WG341713ICV	ICV	04/08/13 19:30	MS130402-2	.02		.01954	mg/L	97.7	90	110			
WG341713ICB	ICB	04/08/13 19:34				U	mg/L		-0.0015	0.0015			
WG341713LFB	LFB	04/08/13 19:37	MS130329-1	.01001		.0098	mg/L	97.9	85	115			
L11218-05AS	AS	04/08/13 20:13	MS130329-1	.05005	.212	.2545	mg/L	84.9	70	130			
L11218-05ASD	ASD	04/08/13 20:16	MS130329-1	.05005	.212	.2632	mg/L	102.3	70	130	3.36	20	
L11375-01AS	AS	04/08/13 21:05	MS130329-1	.02002	.07	.0913	mg/L	106.4	70	130			
L11375-01ASD	ASD	04/08/13 21:08	MS130329-1	.02002	.07	.0854	mg/L	76.9	70	130	6.68	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Boron, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.02		.01946	mg/L	97.3	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.01001		.00947	mg/L	94.6	85	115			
L11356-02LFM	LFM	04/08/13 23:37	MS130329-1	.01001	.17	.17	mg/L	0	70	130			M3
L11356-02LFMD	LFMD	04/08/13 23:40	MS130329-1	.01001	.17	.177	mg/L	69.9	70	130	4.03	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05103	mg/L	102.1	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0003	0.0003			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.0501		.04909	mg/L	98	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.0501	U	.04709	mg/L	94	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.0501	U	.0474	mg/L	94.6	70	130	0.66	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05046	mg/L	100.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.051	mg/L	101.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	U	.04966	mg/L	99.1	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	U	.05026	mg/L	100.3	70	130	1.2	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.36	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.26	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	67.95918		73.62	mg/L	108.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	67.95918	308	361.2	mg/L	78.3	85	115			M3
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	67.95918	308	358.26	mg/L	74	85	115	0.82	20	M3
L11354-02AS	AS	04/03/13 22:55	II130326-2	67.95918	36.5	114.83	mg/L	115.3	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	67.95918	36.5	113.75	mg/L	113.7	85	115	0.94	20	

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ACZ Project ID: ***L11354***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		98.44	mg/L	98.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	67.95918		71.19	mg/L	104.8	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	67.95918	185	258.9	mg/L	108.7	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	67.95918	185	257.8	mg/L	107.1	70	130	0.43	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	67.95918	40.8	112	mg/L	104.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	67.95918	40.8	111.9	mg/L	104.6	70	130	0.09	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.04867	mg/L	97.3	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0015	0.0015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04798	mg/L	95.9	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.04725	mg/L	94.4	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.04798	mg/L	95.9	70	130	1.53	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04901	mg/L	98	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05044	mg/L	100.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04917	mg/L	98.2	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.049	mg/L	97.9	70	130	0.35	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05078	mg/L	101.6	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.00015	0.00015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.05007	mg/L	100	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	.00017	.04943	mg/L	98.4	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	.00017	.04985	mg/L	99.3	70	130	0.85	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04878	mg/L	97.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04948	mg/L	98.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04938	mg/L	98.7	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05004	mg/L	100	70	130	1.33	20	

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ACZ Project ID: ***L11354***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.04862	mg/L	97.2	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0015	0.0015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04692	mg/L	93.7	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.04253	mg/L	85	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.0429	mg/L	85.7	70	130	0.87	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05037	mg/L	100.7	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05083	mg/L	101.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04849	mg/L	96.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04862	mg/L	97.1	70	130	0.27	20	

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341537													
WG341537ICV	ICV	04/06/13 1:35	II130114-3	2		2.01	mg/L	100.5	95	105			
WG341537ICB	ICB	04/06/13 1:41				U	mg/L		-0.3	0.3			
WG341537LFB	LFB	04/06/13 1:54	II130326-2	1		.94	mg/L	94	85	115			
L11353-01AS	AS	04/06/13 2:00	II130326-2	1	U	1	mg/L	100	85	115			
L11353-01ASD	ASD	04/06/13 2:03	II130326-2	1	U	1.04	mg/L	104	85	115	3.92	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.07	mg/L	103.5	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.03	mg/L	103	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	U	1.05	mg/L	105	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	U	1.08	mg/L	108	70	130	2.82	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.04	mg/L	104	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	1.02	mg/L	102	70	130	1.94	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.061	mg/L	103.1	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.137	mg/L	113.7	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	.04	1.077	mg/L	103.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	.04	1.081	mg/L	104.1	85	115	0.37	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.104	mg/L	110.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.081	mg/L	108.1	85	115	2.11	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.021	mg/L	102.1	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	130	130	mg/L	100	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	130	129.3	mg/L	30	70	130	0.54	20	M3
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.128	mg/L	107.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.115	mg/L	106.5	70	130	1.16	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.04999	mg/L	100	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0003	0.0003			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04724	mg/L	94.4	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.04882	mg/L	97.5	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.04928	mg/L	98.5	70	130	0.94	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05165	mg/L	103.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.0515	mg/L	102.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04893	mg/L	97.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04923	mg/L	98.4	70	130	0.61	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.998	mg/L	99.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.014	mg/L	101.4	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	.08	1.127	mg/L	104.7	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	.08	1.137	mg/L	105.7	85	115	0.88	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.027	mg/L	102.7	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.035	mg/L	103.5	85	115	0.78	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.974	mg/L	97.4	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	.76	1.781	mg/L	102.1	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	.76	1.767	mg/L	100.7	70	130	0.79	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.055	mg/L	100.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.042	mg/L	99.2	70	130	1.24	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		103.39	mg/L	103.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.2	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	49.99941		53.64	mg/L	107.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	49.99941	U	56.5	mg/L	113	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	49.99941	U	56.19	mg/L	112.4	85	115	0.55	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	49.99941	10	67.69	mg/L	115.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	49.99941	10	67.1	mg/L	114.2	85	115	0.88	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		100.67	mg/L	100.7	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	49.99941		51.43	mg/L	102.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	49.99941	8.8	60.68	mg/L	103.8	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	49.99941	8.8	60.47	mg/L	103.3	70	130	0.35	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	49.99941	7	58.77	mg/L	103.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	49.99941	7	58.85	mg/L	103.7	70	130	0.14	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05259	mg/L	105.2	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0015	0.0015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.05076	mg/L	101.4	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	.0037	.05343	mg/L	99.4	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	.0037	.05361	mg/L	99.7	70	130	0.34	20	

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ACZ Project ID: ***L11354***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04949	mg/L	99	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05001	mg/L	99.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.05001	mg/L	99.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05033	mg/L	100.6	70	130	0.64	20	
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.05		.05104	mg/L	102.1	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.05005		.05115	mg/L	102.2	85	115			
L11356-02LFM	LFM	04/08/13 23:37	MS130329-1	.05005	U	.052	mg/L	103.9	70	130			
L11356-02LFMD	LFMD	04/08/13 23:40	MS130329-1	.05005	U	.051	mg/L	101.9	70	130	1.94	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341819													
WG341819CCV1	CCV	04/10/13 10:55	HG130219-7	5		3.94	ng/L	78.8	76.5	123.4			
WG341819CCB1	CCB	04/10/13 11:02				U	ng/L		-0.5	0.5			
WG341819LFB	LFB	04/10/13 11:09	HG130219-8	2		1.62	ng/L	81	71	125			
L11354-01MS	MS	04/10/13 11:41	HG2XPREP	8	U	3.22	ng/L	80.5	71	125			
L11354-01MSD	MSD	04/10/13 11:48	HG2XPREP	8	U	3.52	ng/L	88	71	125	8.9	24	
WG341819CCV2	CCV	04/10/13 11:55	HG130219-7	5		4.23	ng/L	84.6	76.5	123.4			
WG341819CCB2	CCB	04/10/13 12:02				U	ng/L		-0.5	0.5			
WG341819CCV3	CCV	04/10/13 12:36	HG130219-7	5		4.03	ng/L	80.6	76.5	123.4			
WG341819CCB3	CCB	04/10/13 12:42				U	ng/L		-0.5	0.5			
WG341819CCV4	CCV	04/10/13 13:23	HG130219-7	5		4.12	ng/L	82.4	76.5	123.4			
WG341819CCB4	CCB	04/10/13 13:30				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L11354***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341603													
WG341603CCV1	CCV	04/05/13 11:20	HG130219-7	5		3.93	ng/L	78.6	76.5	123.4			
WG341603CCB1	CCB	04/05/13 11:27				U	ng/L		-0.5	0.5			
WG341603LFB	LFB	04/05/13 11:33	HG130219-8	2		1.49	ng/L	74.5	71	125			
WG341603CCV2	CCV	04/05/13 12:24	HG130219-7	5		4.19	ng/L	83.8	76.5	123.4			
WG341603CCB2	CCB	04/05/13 12:30				U	ng/L		-0.5	0.5			
WG341603CCV3	CCV	04/05/13 13:27	HG130219-7	5		3.91	ng/L	78.2	76.5	123.4			
WG341603CCB3	CCB	04/05/13 13:34				U	ng/L		-0.5	0.5			
L11350-01MS	MS	04/05/13 13:48	HG10XPRE	200	6	20.6	ng/L	73	71	125			
L11350-01MSD	MSD	04/05/13 13:54	HG10XPRE	200	6	20	ng/L	70	71	125	2.96	24	MA
WG341603CCV4	CCV	04/05/13 14:01	HG130219-7	5		3.95	ng/L	79	76.5	123.4			
WG341603CCB4	CCB	04/05/13 14:08				U	ng/L		-0.5	0.5			
WG341603CCV5	CCV	04/05/13 14:49	HG130219-7	5		4.26	ng/L	85.2	76.5	123.4			
WG341603CCB5	CCB	04/05/13 14:55				U	ng/L		-0.5	0.5			
WG341603CCV6	CCV	04/08/13 10:08	HG130219-7	5		4.13	ng/L	82.6	76.5	123.4			
WG341603CCB6	CCB	04/08/13 10:15				U	ng/L		-0.5	0.5			
WG341603CCV7	CCV	04/08/13 10:56	HG130219-7	5		4.22	ng/L	84.4	76.5	123.4			
WG341603CCB7	CCB	04/08/13 11:03				U	ng/L		-0.5	0.5			
WG341603CCV8	CCV	04/08/13 11:30	HG130219-7	5		4.58	ng/L	91.6	76.5	123.4			
WG341603CCB8	CCB	04/08/13 11:36				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.02004		.019	mg/L	94.8	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0015	0.0015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05		.04636	mg/L	92.7	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05	.0301	.07948	mg/L	98.8	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05	.0301	.07978	mg/L	99.4	70	130	0.38	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02004		.01976	mg/L	98.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05		.05092	mg/L	101.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05	.0228	.0725	mg/L	99.4	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05	.0228	.07201	mg/L	98.4	70	130	0.68	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05014	mg/L	100.3	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0018	0.0018			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04771	mg/L	95.3	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.0441	mg/L	88.1	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.0446	mg/L	89.1	70	130	1.13	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05077	mg/L	101.5	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0018	0.0018			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00132	0.00132			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04972	mg/L	99.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04797	mg/L	95.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04743	mg/L	94.8	70	130	1.13	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341704													
WG341704ICV	ICV	04/08/13 12:53	WI121105-5	1.003		1.006	mg/L	100.3	90	110			
WG341704ICB	ICB	04/08/13 12:56				U	mg/L		-0.15	0.15			
WG341704LFB1	LFB	04/08/13 12:58	WI121218-3	1		.998	mg/L	99.8	90	110			
WG341704LFB2	LFB	04/08/13 13:29	WI121218-3	1		1.038	mg/L	103.8	90	110			
L11326-07AS	AS	04/08/13 13:31	WI121218-3	1	U	.975	mg/L	97.5	90	110			
L11326-08DUP	DUP	04/08/13 13:33			U	U	mg/L				0	20	RA
WG341715													
WG341715LFB1	LFB	04/08/13 15:21	WI121218-3	1		1.025	mg/L	102.5	90	110			
L11279-01AS	AS	04/08/13 15:24	WI121218-3	1	.16	1.171	mg/L	101.1	90	110			
L11279-02DUP	DUP	04/08/13 15:26			.16	.16	mg/L				0	20	RA
L11354-05AS	AS	04/08/13 15:39	WI121218-3	1	.07	1.067	mg/L	99.7	90	110			
L11355-01DUP	DUP	04/08/13 15:41			.13	.11	mg/L				16.7	20	RA
WG341715LFB2	LFB	04/08/13 15:53	WI121218-3	1		.947	mg/L	94.7	90	110			

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ACZ Project ID: ***L11354***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341543													
WG341543ICV	ICV	04/04/13 11:06	WI130221-3	.65228		.648	mg/L	99.3	90	110			
WG341543ICB	ICB	04/04/13 11:09				U	mg/L		-0.03	0.03			
WG341569													
WG341504LRB	LRB	04/04/13 13:26				U	mg/L		-0.03	0.03			
WG341504LFB	LFB	04/04/13 13:27	WI130403-2	.5		.485	mg/L	97	90	110			
L11325-06LFM	LFM	04/04/13 13:45	WI130403-2	.5	U	.512	mg/L	102.4	90	110			
L11325-07DUP	DUP	04/04/13 13:47			U	U	mg/L				0	20	RA
WG341806													
WG341806ICV	ICV	04/09/13 18:30	WI130404-1	.65228		.637	mg/L	97.7	90	110			
WG341806ICB	ICB	04/09/13 18:33				U	mg/L		-0.03	0.03			
WG341752LRB	LRB	04/09/13 18:34				U	mg/L		-0.03	0.03			
WG341752LFB	LFB	04/09/13 18:35	WI130403-2	.5		.491	mg/L	98.2	90	110			
L11353-04DUP	DUP	04/09/13 18:40			.02	.023	mg/L				14	20	RA
L11353-01LFM	LFM	04/09/13 21:50	WI130403-2	.5	.48	1.033	mg/L	110.6	90	110			M1

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	20		20.13	mg/L	100.7	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	99.97161		105.26	mg/L	105.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	99.97161	61.9	166.68	mg/L	104.8	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	99.97161	61.9	169.28	mg/L	107.4	85	115	1.55	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	99.97161	4.2	110.48	mg/L	106.3	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	99.97161	4.2	110.71	mg/L	106.5	85	115	0.21	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	20		19.82	mg/L	99.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	99.97161		100.4	mg/L	100.4	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	99.97161	6.3	109.5	mg/L	103.2	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	99.97161	6.3	109.1	mg/L	102.8	70	130	0.37	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	99.97161	7.5	109.9	mg/L	102.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	99.97161	7.5	109.7	mg/L	102.2	70	130	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.3	0.3			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1.0009		1.05	mg/L	104.9	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.96	mg/L	98	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1.0009		1.04	mg/L	103.9	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1.0009	U	1.03	mg/L	102.9	70	130	0.97	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1.0009	U	1.05	mg/L	104.9	70	130	0.96	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05205	mg/L	104.1	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0003	0.0003			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04761	mg/L	95.1	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.05019	mg/L	100.3	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.05126	mg/L	102.4	70	130	2.11	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05106	mg/L	102.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04854	mg/L	97	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	.0021	.05027	mg/L	96.2	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	.0021	.05039	mg/L	96.5	70	130	0.24	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.02006		.02046	mg/L	102	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.00015	0.00015			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.01001		.009689	mg/L	96.8	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.01001	U	.006357	mg/L	63.5	70	130			M2 ZA
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.01001	U	.006647	mg/L	66.4	70	130	4.46	20	M2 ZA

SPF Water Engineering

ACZ Project ID: ***L11354***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02006		.02046	mg/L	102	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01001		.01027	mg/L	102.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.01001	U	.009622	mg/L	96.1	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.01001	U	.009805	mg/L	98	70	130	1.88	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.35	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.49	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	100.0416		104.33	mg/L	104.3	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	100.0416	243	332.61	mg/L	89.6	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	100.0416	243	334.56	mg/L	91.5	85	115	0.58	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	100.0416	43.4	145.52	mg/L	102.1	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	100.0416	43.4	145.6	mg/L	102.2	85	115	0.05	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		99.84	mg/L	99.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	100.0416		99.38	mg/L	99.3	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	100.0416	320	422.6	mg/L	102.6	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	100.0416	320	428.2	mg/L	108.2	70	130	1.32	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	100.0416	26.4	128.5	mg/L	102.1	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	100.0416	26.4	127.7	mg/L	101.3	70	130	0.62	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.971	mg/L	98.6	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.51	mg/L	102	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	2.22	2.637	mg/L	83.4	85	115			M3
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	2.22	2.652	mg/L	86.4	85	115	0.57	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.25	.76	mg/L	102	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.25	.758	mg/L	101.6	85	115	0.26	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.971	mg/L	98.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.49	mg/L	98	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	4.12	4.572	mg/L	90.4	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	4.12	4.605	mg/L	97	70	130	0.72	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.25	.754	mg/L	100.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.25	.749	mg/L	99.8	70	130	0.67	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.05157	mg/L	103.1	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0003	0.0003			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04832	mg/L	96.5	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.04984	mg/L	99.6	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.05023	mg/L	100.4	70	130	0.78	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05294	mg/L	105.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05149	mg/L	102.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04947	mg/L	98.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.0496	mg/L	99.1	70	130	0.26	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05005		.0481	mg/L	96.1	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0003	0.0003			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.05005		.04639	mg/L	92.7	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.05005	U	.04636	mg/L	92.6	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.05005	U	.04675	mg/L	93.4	70	130	0.84	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04938	mg/L	98.8	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05065	mg/L	101.2	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04968	mg/L	99.3	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05032	mg/L	100.5	70	130	1.28	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.0241	mg/L	101.2	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0059	mg/L		-0.015	0.015			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.0204	mg/L	102	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	1	U	1.0281	mg/L	102.8	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	1	U	1.0401	mg/L	104	85	115	1.16	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.0385	mg/L	103.9	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.0368	mg/L	103.7	85	115	0.16	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9565	mg/L	97.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.015	0.015			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.011	0.011			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.9926	mg/L	99.3	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	1	U	.9994	mg/L	99.9	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	1	U	.9986	mg/L	99.9	70	130	0.08	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.012	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	.9962	mg/L	99.6	70	130	1.57	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341607													
WG341607ICV	ICV	04/05/13 17:36	MS130402-2	.05		.0493	mg/L	98.6	90	110			
WG341607ICB	ICB	04/05/13 17:39				U	mg/L		-0.0006	0.0006			
WG341607LFB	LFB	04/05/13 17:42	MS130329-1	.0501		.04899	mg/L	97.8	85	115			
L11288-05AS	AS	04/05/13 18:38	MS130329-1	.0501	U	.04738	mg/L	94.6	70	130			
L11288-05ASD	ASD	04/05/13 18:41	MS130329-1	.0501	U	.04775	mg/L	95.3	70	130	0.78	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04843	mg/L	96.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.04989	mg/L	99.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	.0223	.07208	mg/L	99.4	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	.0223	.07206	mg/L	99.3	70	130	0.03	20	

SPF Water Engineering

ACZ Project ID: ***L11354***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.999	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.526	mg/L	105.2	85	115			
L11282-01AS	AS	04/03/13 22:07	II130326-2	.5	U	.537	mg/L	107.4	85	115			
L11282-01ASD	ASD	04/03/13 22:10	II130326-2	.5	U	.54	mg/L	108	85	115	0.56	20	
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.08	.611	mg/L	106.2	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.08	.606	mg/L	105.2	85	115	0.82	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.987	mg/L	99.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.516	mg/L	103.2	85	115			
L11353-03LFM	LFM	04/06/13 6:28	II130326-2	.5	.44	.954	mg/L	102.8	70	130			
L11353-03LFMD	LFMD	04/06/13 6:31	II130326-2	.5	.44	.942	mg/L	100.4	70	130	1.27	20	
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	U	.516	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	U	.52	mg/L	102	70	130	0.77	20	

SPF Water Engineering ACZ Project ID: ***L11354***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11354-01	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341425	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
			M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341607	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341704	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341569	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11354-02	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341607	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341704	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L11354***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11354-03	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341607	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11354-04	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341637	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
			M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341607	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L11354***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11354-05	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341607	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11354-06	WG341603	Mercury, total	M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Boron, dissolved	M200.8 ICP-MS
Boron, total	M200.8 ICP-MS
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11354
Date Received: 04/01/2013 09:50
Received By: ksj
Date Printed: 4/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the time and remarks section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2759	4.5	12	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11354
L11354 4.1.12

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW
PO#: Calico Winter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW
Government Canal Springs	3/13/13 11:00		5	X
Sourdough Springs Upper	3/17/13 11:50		5	X
Lowe Spring	3/13/13 12:15		5	X
59763	3/18/13 18:30		5	X
Prod-1	3/17/13 13:40		5	X
Transfer Trip Blank	3/17/13 16:30		1	

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* See attached list detailing parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/28/13 16:00	[illegible]	4.1.13 9:52

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11354 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 15, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11355

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 01, 2013. This project has been assigned to ACZ's project number, L11355. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11355. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 15, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BISHOP WELL

ACZ Sample ID: ***L11355-01***
Date Sampled: *03/26/13 17:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 12:10	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 14:00	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 11:34	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BISHOP WELL

ACZ Sample ID: ***L11355-01***
Date Sampled: *03/26/13 17:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/04/13 1:34	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 7:05	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:28	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 0:33	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0038		*	mg/L	0.0002	0.001	04/05/13 20:28	msh
Arsenic, total	M200.8 ICP-MS	0.0034			mg/L	0.0002	0.001	04/06/13 0:33	pmc
Barium, dissolved	M200.7 ICP	0.012	B		mg/L	0.003	0.02	04/04/13 1:34	aeb
Barium, total	M200.7 ICP	0.010	B		mg/L	0.003	0.02	04/06/13 7:05	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:28	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:33	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/04/13 1:34	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:13	aeb
Boron, dissolved	M200.8 ICP-MS	0.21		*	mg/L	0.01	0.02	04/08/13 17:43	msh
Boron, total	M200.8 ICP-MS	0.21		*	mg/L	0.03	0.05	04/08/13 22:00	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:28	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:33	pmc
Calcium, dissolved	M200.7 ICP	3.0			mg/L	0.2	1	04/04/13 1:34	aeb
Calcium, total	M200.7 ICP	2.5			mg/L	0.2	1	04/06/13 7:05	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 20:28	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 0:33	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00011	B		mg/L	0.00005	0.0003	04/05/13 20:28	msh
Cobalt, total	M200.8 ICP-MS	0.00010	B		mg/L	0.00005	0.0003	04/06/13 0:33	pmc
Copper, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0005	0.003	04/05/13 20:28	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:33	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:37	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:05	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/04/13 1:34	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/06/13 7:05	aeb
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	04/05/13 20:28	msh
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	04/06/13 0:33	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/04/13 1:34	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/06/13 7:05	aeb
Magnesium, dissolved	M200.7 ICP	0.5	B		mg/L	0.2	1	04/04/13 1:34	aeb
Magnesium, total	M200.7 ICP	0.5	B		mg/L	0.2	1	04/06/13 7:05	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0070		*	mg/L	0.0005	0.003	04/05/13 20:28	msh
Manganese, total	M200.8 ICP-MS	0.0086			mg/L	0.0005	0.003	04/06/13 0:33	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:43	scp
Mercury, total	M1631, Atomic Fluorescence	0.8	B	*	ng/L	0.4	1	04/11/13 11:12	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0086			mg/L	0.0005	0.003	04/05/13 20:28	msh
Molybdenum, total	M200.8 ICP-MS	0.0094			mg/L	0.0005	0.003	04/06/13 0:33	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:28	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:33	pmc
Potassium, dissolved	M200.7 ICP	4.2			mg/L	0.3	2	04/04/13 1:34	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: BISHOP WELL

ACZ Sample ID: ***L11355-01***
Date Sampled: *03/26/13 17:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	4.3			mg/L	0.3	2	04/06/13 7:05	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/04/13 1:34	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:05	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 20:28	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 0:33	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:28	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:33	pmc
Sodium, dissolved	M200.7 ICP	86.3			mg/L	0.3	2	04/04/13 1:34	aeb
Sodium, total	M200.7 ICP	85.8			mg/L	0.3	2	04/06/13 7:05	aeb
Strontium, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/04/13 1:34	aeb
Strontium, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/06/13 7:05	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:28	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:33	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:28	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 0:33	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/04/13 1:34	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:05	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0002	0.001	04/05/13 20:28	msh
Vanadium, total	M200.8 ICP-MS	0.0010			mg/L	0.0002	0.001	04/06/13 0:33	pmc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	04/04/13 1:34	aeb
Zinc, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	04/06/13 7:05	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	10			mg/L	1	7	04/15/13 15:51	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.13	B	*	mg/L	0.05	0.5	04/08/13 15:40	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.14		*	mg/L	0.01	0.05	04/09/13 22:11	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-1

ACZ Sample ID: ***L11355-02***
Date Sampled: *03/26/13 11:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 12:35	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 11:45	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 14:12	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-1

ACZ Sample ID: ***L11355-02***
Date Sampled: *03/26/13 11:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.08	B		mg/L	0.03	0.2	04/04/13 1:45	aeb
Aluminum, total	M200.7 ICP	0.23			mg/L	0.03	0.2	04/06/13 7:09	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:32	msh
Antimony, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0004	0.002	04/06/13 0:36	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0317		*	mg/L	0.0002	0.001	04/05/13 20:32	msh
Arsenic, total	M200.8 ICP-MS	0.0331			mg/L	0.0002	0.001	04/06/13 0:36	pmc
Barium, dissolved	M200.7 ICP	0.029			mg/L	0.003	0.02	04/04/13 1:45	aeb
Barium, total	M200.7 ICP	0.031			mg/L	0.003	0.02	04/06/13 7:09	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:32	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:36	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/04/13 1:45	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:16	aeb
Boron, dissolved	M200.8 ICP-MS	0.071		*	mg/L	0.005	0.01	04/08/13 17:46	msh
Boron, total	M200.8 ICP-MS	0.07		*	mg/L	0.01	0.02	04/08/13 22:08	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:32	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:36	pmc
Calcium, dissolved	M200.7 ICP	32.1			mg/L	0.2	1	04/04/13 1:45	aeb
Calcium, total	M200.7 ICP	30.8			mg/L	0.2	1	04/06/13 7:09	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0005	0.002	04/05/13 20:32	msh
Chromium, total	M200.8 ICP-MS	0.0010	B		mg/L	0.0005	0.002	04/06/13 0:36	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00012	B		mg/L	0.00005	0.0003	04/05/13 20:32	msh
Cobalt, total	M200.8 ICP-MS	0.00009	B		mg/L	0.00005	0.0003	04/06/13 0:36	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:32	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:36	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:40	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:09	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/04/13 1:45	aeb
Iron, total	M200.7 ICP	1.04			mg/L	0.02	0.05	04/06/13 7:09	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:32	msh
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	04/06/13 0:36	pmc
Lithium, dissolved	M200.7 ICP	0.06	B		mg/L	0.02	0.1	04/04/13 1:45	aeb
Lithium, total	M200.7 ICP	0.07	B		mg/L	0.02	0.1	04/06/13 7:09	aeb
Magnesium, dissolved	M200.7 ICP	3.9			mg/L	0.2	1	04/04/13 1:45	aeb
Magnesium, total	M200.7 ICP	3.7			mg/L	0.2	1	04/06/13 7:09	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0018	B	*	mg/L	0.0005	0.003	04/05/13 20:32	msh
Manganese, total	M200.8 ICP-MS	0.0350			mg/L	0.0005	0.003	04/06/13 0:36	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:50	scp
Mercury, total	M1631, Atomic Fluorescence	1.5			ng/L	0.4	1	04/11/13 11:32	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0044			mg/L	0.0005	0.003	04/05/13 20:32	msh
Molybdenum, total	M200.8 ICP-MS	0.0047			mg/L	0.0005	0.003	04/06/13 0:36	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:32	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:36	pmc
Potassium, dissolved	M200.7 ICP	6.6			mg/L	0.3	2	04/04/13 1:45	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-1

ACZ Sample ID: ***L11355-02***
Date Sampled: *03/26/13 11:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	6.1			mg/L	0.3	2	04/06/13 7:09	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/04/13 1:45	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:09	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0047			mg/L	0.0001	0.0003	04/05/13 20:32	msh
Selenium, total	M200.8 ICP-MS	0.0043			mg/L	0.0001	0.0003	04/06/13 0:36	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:32	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:36	pmc
Sodium, dissolved	M200.7 ICP	42.4			mg/L	0.3	2	04/04/13 1:45	aeb
Sodium, total	M200.7 ICP	40.7			mg/L	0.3	2	04/06/13 7:09	aeb
Strontium, dissolved	M200.7 ICP	0.12			mg/L	0.01	0.05	04/04/13 1:45	aeb
Strontium, total	M200.7 ICP	0.12			mg/L	0.01	0.05	04/06/13 7:09	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:32	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:36	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:32	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 0:36	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/04/13 1:45	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:09	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0098			mg/L	0.0002	0.001	04/05/13 20:32	msh
Vanadium, total	M200.8 ICP-MS	0.0109			mg/L	0.0002	0.001	04/06/13 0:36	pmc
Zinc, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/04/13 1:45	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:09	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	96			mg/L	1	7	04/15/13 15:51	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:42	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	04/09/13 22:14	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: POISON SPRINGS

ACZ Sample ID: ***L11355-03***
Date Sampled: *03/26/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:00	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 14:48	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 11:57	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: POISON SPRINGS

ACZ Sample ID: ***L11355-03***
Date Sampled: *03/26/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/04/13 1:48	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 7:12	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:35	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 0:46	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0360		*	mg/L	0.0002	0.001	04/05/13 20:35	msh
Arsenic, total	M200.8 ICP-MS	0.0360			mg/L	0.0002	0.001	04/06/13 0:46	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	04/04/13 1:48	aeb
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	04/06/13 7:12	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:35	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:46	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/04/13 1:48	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:19	aeb
Boron, dissolved	M200.8 ICP-MS	0.118		*	mg/L	0.005	0.01	04/08/13 17:50	msh
Boron, total	M200.8 ICP-MS	0.12		*	mg/L	0.02	0.04	04/08/13 22:16	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:35	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:46	pmc
Calcium, dissolved	M200.7 ICP	1.3			mg/L	0.2	1	04/04/13 1:48	aeb
Calcium, total	M200.7 ICP	1.2			mg/L	0.2	1	04/06/13 7:12	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 20:35	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 0:46	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00011	B		mg/L	0.00005	0.0003	04/05/13 20:35	msh
Cobalt, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:46	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:35	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 0:46	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:50	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:12	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/04/13 1:48	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/06/13 7:12	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:35	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:46	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/04/13 1:48	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/06/13 7:12	aeb
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	04/04/13 1:48	aeb
Magnesium, total	M200.7 ICP		U		mg/L	0.2	1	04/06/13 7:12	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0009	B	*	mg/L	0.0005	0.003	04/05/13 20:35	msh
Manganese, total	M200.8 ICP-MS	0.0023	B		mg/L	0.0005	0.003	04/06/13 0:46	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 14:56	scp
Mercury, total	M1631, Atomic Fluorescence	0.5	B	*	ng/L	0.4	1	04/11/13 11:50	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0149			mg/L	0.0005	0.003	04/05/13 20:35	msh
Molybdenum, total	M200.8 ICP-MS	0.0165			mg/L	0.0005	0.003	04/06/13 0:46	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:35	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 0:46	pmc
Potassium, dissolved	M200.7 ICP	6.2			mg/L	0.3	2	04/04/13 1:48	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: POISON SPRINGS

ACZ Sample ID: ***L11355-03***
Date Sampled: *03/26/13 18:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	5.9			mg/L	0.3	2	04/06/13 7:12	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/04/13 1:48	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:12	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 20:35	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 0:46	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:35	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:46	pmc
Sodium, dissolved	M200.7 ICP	116			mg/L	0.3	2	04/04/13 1:48	aeb
Sodium, total	M200.7 ICP	113			mg/L	0.3	2	04/06/13 7:12	aeb
Strontium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/04/13 1:48	aeb
Strontium, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:12	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:35	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:46	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:35	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 0:46	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/04/13 1:48	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:12	aeb
Vanadium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/05/13 20:35	msh
Vanadium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0002	0.001	04/06/13 0:46	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/04/13 1:48	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:12	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	3	B		mg/L	1	7	04/15/13 15:52	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.07	B	*	mg/L	0.05	0.5	04/08/13 15:43	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	04/09/13 22:16	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59760

ACZ Sample ID: ***L11355-04***
Date Sampled: *03/26/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 13:13	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 15:00	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 12:08	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59760

ACZ Sample ID: ***L11355-04***
Date Sampled: *03/26/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/04/13 1:51	aeb
Aluminum, total	M200.7 ICP	0.12	B		mg/L	0.03	0.2	04/06/13 7:15	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	04/05/13 20:38	msh
Antimony, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	04/06/13 0:49	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0278		*	mg/L	0.0002	0.001	04/05/13 20:38	msh
Arsenic, total	M200.8 ICP-MS	0.0283			mg/L	0.0002	0.001	04/06/13 0:49	pmc
Barium, dissolved	M200.7 ICP	0.053			mg/L	0.003	0.02	04/04/13 1:51	aeb
Barium, total	M200.7 ICP	0.052			mg/L	0.003	0.02	04/06/13 7:15	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:38	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:49	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/04/13 1:51	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:22	aeb
Boron, dissolved	M200.8 ICP-MS	0.074		*	mg/L	0.005	0.01	04/08/13 17:53	msh
Boron, total	M200.8 ICP-MS	0.08		*	mg/L	0.01	0.02	04/08/13 22:19	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:38	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:49	pmc
Calcium, dissolved	M200.7 ICP	43.5			mg/L	0.2	1	04/04/13 1:51	aeb
Calcium, total	M200.7 ICP	40.8			mg/L	0.2	1	04/06/13 7:15	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0005	0.002	04/05/13 20:38	msh
Chromium, total	M200.8 ICP-MS	0.0009	B		mg/L	0.0005	0.002	04/06/13 0:49	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00013	B		mg/L	0.00005	0.0003	04/05/13 20:38	msh
Cobalt, total	M200.8 ICP-MS	0.00011	B		mg/L	0.00005	0.0003	04/06/13 0:49	pmc
Copper, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0005	0.003	04/05/13 20:38	msh
Copper, total	M200.8 ICP-MS	0.0051			mg/L	0.0005	0.003	04/06/13 0:49	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:53	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:15	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/04/13 1:51	aeb
Iron, total	M200.7 ICP	0.05	B		mg/L	0.02	0.05	04/06/13 7:15	aeb
Lead, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	04/05/13 20:38	msh
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	04/06/13 0:49	pmc
Lithium, dissolved	M200.7 ICP	0.05	B		mg/L	0.02	0.1	04/04/13 1:51	aeb
Lithium, total	M200.7 ICP	0.05	B		mg/L	0.02	0.1	04/06/13 7:15	aeb
Magnesium, dissolved	M200.7 ICP	7.5			mg/L	0.2	1	04/04/13 1:51	aeb
Magnesium, total	M200.7 ICP	7.0			mg/L	0.2	1	04/06/13 7:15	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0010	B	*	mg/L	0.0005	0.003	04/05/13 20:38	msh
Manganese, total	M200.8 ICP-MS	0.0039			mg/L	0.0005	0.003	04/06/13 0:49	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/12/13 15:03	scp
Mercury, total	M1631, Atomic Fluorescence	0.9	B	*	ng/L	0.4	1	04/11/13 11:57	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0029	B		mg/L	0.0005	0.003	04/05/13 20:38	msh
Molybdenum, total	M200.8 ICP-MS	0.0032			mg/L	0.0005	0.003	04/06/13 0:49	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:38	msh
Nickel, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0006	0.003	04/06/13 0:49	pmc
Potassium, dissolved	M200.7 ICP	7.9			mg/L	0.3	2	04/04/13 1:51	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59760

ACZ Sample ID: ***L11355-04***
Date Sampled: *03/26/13 13:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	7.5			mg/L	0.3	2	04/06/13 7:15	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/04/13 1:51	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:15	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0021			mg/L	0.0001	0.0003	04/05/13 20:38	msh
Selenium, total	M200.8 ICP-MS	0.0020			mg/L	0.0001	0.0003	04/06/13 0:49	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:38	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 0:49	pmc
Sodium, dissolved	M200.7 ICP	28.3			mg/L	0.3	2	04/04/13 1:51	aeb
Sodium, total	M200.7 ICP	26.4			mg/L	0.3	2	04/06/13 7:15	aeb
Strontium, dissolved	M200.7 ICP	0.26			mg/L	0.01	0.05	04/04/13 1:51	aeb
Strontium, total	M200.7 ICP	0.25			mg/L	0.01	0.05	04/06/13 7:15	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:38	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 0:49	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:38	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 0:49	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/04/13 1:51	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:15	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0143			mg/L	0.0002	0.001	04/05/13 20:38	msh
Vanadium, total	M200.8 ICP-MS	0.0156			mg/L	0.0002	0.001	04/06/13 0:49	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/04/13 1:51	aeb
Zinc, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	04/06/13 7:15	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	140			mg/L	1	7	04/15/13 15:52	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:44	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/09/13 22:17	pjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11355***

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		1.974	mg/L	98.7	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.09	0.09			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1		1.112	mg/L	111.2	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1	U	1.052	mg/L	105.2	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1	U	1.032	mg/L	103.2	85	115	1.92	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.037	mg/L	101.9	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.09	0.09			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.066	0.066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.02	mg/L	102	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.12	1.394	mg/L	127.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.12	1.404	mg/L	128.4	70	130	0.71	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02		.02077	mg/L	103.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0012	0.0012			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01		.00983	mg/L	98.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.01	.0008	.01026	mg/L	94.6	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.01	.0008	.01025	mg/L	94.5	70	130	0.1	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02		.02	mg/L	100	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0012	0.0012			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00088	0.00088			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.01		.01072	mg/L	107.2	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.01	.0004	.01072	mg/L	103.2	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.01	.0004	.01066	mg/L	102.6	70	130	0.56	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05207	mg/L	104.1	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04869	mg/L	97.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	3.58	3.542	mg/L	-75.9	70	130			M3
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	3.58	3.536	mg/L	-87.9	70	130	0.17	20	M3

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ACZ Project ID: ***L11355***

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05059	mg/L	101.2	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0006	0.0006			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00044	0.00044			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.05294	mg/L	105.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0331	.08668	mg/L	107.1	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0331	.08715	mg/L	108	70	130	0.54	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		1.9735	mg/L	98.7	95	105			
WG341449ICB	ICB	04/04/13 1:10				.0037	mg/L		-0.009	0.009			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	.5		.5101	mg/L	102	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	.5	.012	.5308	mg/L	103.8	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	.5	.012	.5297	mg/L	103.5	85	115	0.21	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9622	mg/L	98.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.009	0.009			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.0066	0.0066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.4846	mg/L	96.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.052	.5464	mg/L	98.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.052	.5452	mg/L	98.6	70	130	0.22	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04983	mg/L	99.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04832	mg/L	96.4	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.03682	mg/L	73.5	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.03567	mg/L	71.2	70	130	3.17	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04745	mg/L	94.9	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.04849	mg/L	96.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	U	.04551	mg/L	90.8	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	U	.04665	mg/L	93.1	70	130	2.47	20	

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ACZ Project ID: ***L11355***

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		2.011	mg/L	100.6	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.12	0.12			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1		1.013	mg/L	101.3	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1	U	1.111	mg/L	111.1	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1	U	1.042	mg/L	104.2	85	115	6.41	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341676													
WG341676ICV	ICV	04/08/13 13:07	II130114-4	2		1.996	mg/L	99.8	95	105			
WG341676ICB	ICB	04/08/13 13:11				U	mg/L		-0.12	0.12			
WG341599LRB	LRB	04/08/13 13:23				U	mg/L		-0.088	0.088			
WG341599LFB	LFB	04/08/13 13:26	II130326-2	1		1.051	mg/L	105.1	85	115			
L11355-04LFM	LFM	04/08/13 14:25	II130326-2	1	U	1.066	mg/L	106.6	70	130			
L11355-04LFMD	LFMD	04/08/13 14:28	II130326-2	1	U	1.009	mg/L	100.9	70	130	5.49	20	

Boron, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341712													
WG341712ICV	ICV	04/08/13 17:01	MS130402-2	.02		.02015	mg/L	100.8	90	110			
WG341712ICB	ICB	04/08/13 17:04				U	mg/L		-0.0015	0.0015			
WG341712LFB1	LFB	04/08/13 17:08	MS130329-1	.01001		.00986	mg/L	98.5	85	115			
L11353-01AS	AS	04/08/13 17:14	MS130329-1	.5005	.66	1.119	mg/L	91.7	70	130			
L11353-01ASD	ASD	04/08/13 17:17	MS130329-1	.5005	.66	1.108	mg/L	89.5	70	130	0.99	20	
WG341712LFB2	LFB	04/08/13 18:42	MS130329-1	.01001		.01002	mg/L	100.1	85	115			

Boron, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341736													
WG341736ICV	ICV	04/08/13 21:33	MS130402-2	.02		.0195	mg/L	97.5	90	110			
WG341736ICB	ICB	04/08/13 21:36				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/08/13 21:39				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/08/13 21:41	MS130329-1	.01001		.0095	mg/L	94.9	85	115			
L11355-02LFM	LFM	04/08/13 22:11	MS130329-1	.01001	.07	.081	mg/L	109.9	70	130			
L11355-02LFMD	LFMD	04/08/13 22:13	MS130329-1	.01001	.07	.08	mg/L	99.9	70	130	1.24	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05092	mg/L	101.8	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.0479	mg/L	95.6	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.04615	mg/L	92.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.04465	mg/L	89.1	70	130	3.3	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.0504	mg/L	100.8	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.04996	mg/L	99.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	U	.04897	mg/L	97.7	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	U	.04877	mg/L	97.3	70	130	0.41	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	100		102.09	mg/L	102.1	95	105			
WG341449ICB	ICB	04/04/13 1:10				.22	mg/L		-0.6	0.6			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	67.95918		73.29	mg/L	107.8	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	67.95918	3	79.88	mg/L	113.1	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	67.95918	3	79.75	mg/L	112.9	85	115	0.16	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		98.44	mg/L	98.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	67.95918		71.19	mg/L	104.8	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	67.95918	40.8	112	mg/L	104.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	67.95918	40.8	111.9	mg/L	104.6	70	130	0.09	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04865	mg/L	97.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.047	mg/L	93.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04486	mg/L	89.6	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04483	mg/L	89.6	70	130	0.07	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04897	mg/L	97.9	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04851	mg/L	96.9	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.001	.05031	mg/L	98.5	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.001	.05027	mg/L	98.4	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05064	mg/L	101.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04932	mg/L	98.5	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	.06557	.109	mg/L	86.8	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	.06557	.1052	mg/L	79.2	70	130	3.55	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04928	mg/L	98.6	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04892	mg/L	97.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.00009	.04811	mg/L	95.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.00009	.0468	mg/L	93.3	70	130	2.76	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04843	mg/L	96.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0462	mg/L	92.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.03961	mg/L	79.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.03928	mg/L	78.5	70	130	0.84	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04987	mg/L	99.7	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04991	mg/L	99.7	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.05049	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.05057	mg/L	101	70	130	0.16	20	

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341537													
WG341537ICV	ICV	04/06/13 1:35	II130114-3	2		2.01	mg/L	100.5	95	105			
WG341537ICB	ICB	04/06/13 1:41				U	mg/L		-0.3	0.3			
WG341537LFB	LFB	04/06/13 1:54	II130326-2	1		.94	mg/L	94	85	115			
L11353-01AS	AS	04/06/13 2:00	II130326-2	1	U	1	mg/L	100	85	115			
L11353-01ASD	ASD	04/06/13 2:03	II130326-2	1	U	1.04	mg/L	104	85	115	3.92	20	
L11355-02AS	AS	04/06/13 2:44	II130326-2	1	U	1.01	mg/L	101	85	115			
L11355-02ASD	ASD	04/06/13 2:47	II130326-2	1	U	1	mg/L	100	85	115	1	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.07	mg/L	103.5	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.03	mg/L	103	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.04	mg/L	104	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	1.02	mg/L	102	70	130	1.94	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		2.073	mg/L	103.7	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.06	0.06			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1		1.13	mg/L	113	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1	U	1.083	mg/L	108.3	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1	U	1.095	mg/L	109.5	85	115	1.1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.021	mg/L	102.1	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.128	mg/L	107.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.115	mg/L	106.5	70	130	1.16	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04931	mg/L	98.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04579	mg/L	91.5	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04818	mg/L	96.3	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.0464	mg/L	92.7	70	130	3.76	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05164	mg/L	103.3	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04895	mg/L	97.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0003	.05037	mg/L	100	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0003	.05062	mg/L	100.5	70	130	0.5	20	

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ACZ Project ID: ***L11355***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		1.999	mg/L	100	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.06	0.06			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1		1.007	mg/L	100.7	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1	U	1.035	mg/L	103.5	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1	U	1.039	mg/L	103.9	85	115	0.39	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.974	mg/L	97.4	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.055	mg/L	100.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.042	mg/L	99.2	70	130	1.24	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	100		104.44	mg/L	104.4	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.6	0.6			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	49.99941		53.35	mg/L	106.7	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	49.99941	.5	56.47	mg/L	111.9	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	49.99941	.5	56.66	mg/L	112.3	85	115	0.34	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		100.67	mg/L	100.7	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	49.99941		51.43	mg/L	102.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	49.99941	7	58.77	mg/L	103.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	49.99941	7	58.85	mg/L	103.7	70	130	0.14	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05183	mg/L	103.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04914	mg/L	98.2	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	1.15	1.194	mg/L	87.9	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	1.15	1.161	mg/L	22	70	130	2.8	20	M3

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ACZ Project ID: ***L11355***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05111	mg/L	102.2	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04882	mg/L	97.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.035	.08452	mg/L	98.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.035	.0832	mg/L	96.3	70	130	1.57	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341924													
WG341924ICV	ICV	04/12/13 9:57	HG130219-7	5		4.91	ng/L	98.2	79	121			
WG341924ICB	ICB	04/12/13 10:03				U	ng/L		-0.5	0.5			
WG341971													
WG341971CCV1	CCV	04/12/13 13:23	HG130219-7	5		5.04	ng/L	100.8	76.5	123.4			
WG341971CCB1	CCB	04/12/13 13:30				U	ng/L		-0.5	0.5			
WG341971LFB	LFB	04/12/13 13:36	HG130219-8	2		2.03	ng/L	101.5	71	125			
L11353-01MS	MS	04/12/13 13:56	HG5XPREP	50	U	10.8	ng/L	108	71	125			
L11353-01MSD	MSD	04/12/13 14:03	HG5XPREP	50	U	10.8	ng/L	108	71	125	0	24	
WG341971CCV2	CCV	04/12/13 14:16	HG130219-7	5		5.12	ng/L	102.4	76.5	123.4			
WG341971CCB2	CCB	04/12/13 14:23				U	ng/L		-0.5	0.5			
WG341433PBW	PBW	04/12/13 15:10				U	ng/L		-0.5	0.5			
WG341971CCV3	CCV	04/12/13 15:16	HG130219-7	5		5.02	ng/L	100.4	76.5	123.4			
WG341971CCB3	CCB	04/12/13 15:23				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L11355***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341871													
WG341871CCV1	CCV	04/11/13 10:02	HG130219-7	5		4.26	ng/L	85.2	76.5	123.4			
WG341871CCB1	CCB	04/11/13 10:09				U	ng/L		-0.5	0.5			
WG341871LFB	LFB	04/11/13 10:16	HG130219-8	2		1.69	ng/L	84.5	71	125			
WG341871CCV2	CCV	04/11/13 10:58	HG130219-7	5		4.37	ng/L	87.4	76.5	123.4			
WG341871CCB2	CCB	04/11/13 11:05				U	ng/L		-0.5	0.5			
L11355-01MS	MS	04/11/13 11:19	HG2XPREP	8	.8	4.41	ng/L	90.3	71	125			
L11355-01MSD	MSD	04/11/13 11:25	HG2XPREP	8	.8	4.2	ng/L	85	71	125	4.88	24	
WG341871CCV3	CCV	04/11/13 12:04	HG130219-7	5		4.45	ng/L	89	76.5	123.4			
WG341871CCB3	CCB	04/11/13 12:11				U	ng/L		-0.5	0.5			
WG341871CCV4	CCV	04/11/13 12:51	HG130219-7	5		4.65	ng/L	93	76.5	123.4			
WG341871CCB4	CCB	04/11/13 12:58				.22	ng/L		-0.5	0.5			
WG341871CCV5	CCV	04/11/13 14:09	HG130219-7	5		4.43	ng/L	88.6	76.5	123.4			
WG341871CCB5	CCB	04/11/13 14:16				U	ng/L		-0.5	0.5			
WG341871CCV6	CCV	04/11/13 14:43	HG130219-7	5		3.97	ng/L	79.4	76.5	123.4			
WG341871CCB6	CCB	04/11/13 14:50				U	ng/L		-0.5	0.5			
WG341871CCV7	CCV	04/11/13 15:31	HG130219-7	5		4.39	ng/L	87.8	76.5	123.4			
WG341871CCB7	CCB	04/11/13 15:38				U	ng/L		-0.5	0.5			
WG341871CCV8	CCV	04/11/13 16:10	HG130219-7	5		4.53	ng/L	90.6	76.5	123.4			
WG341871CCB8	CCB	04/11/13 16:17				.23	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02004		.01896	mg/L	94.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05		.04597	mg/L	91.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05	.0017	.0508	mg/L	98.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05	.0017	.04911	mg/L	94.8	70	130	3.38	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02004		.02006	mg/L	100.1	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0015	0.0015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.0011	0.0011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05		.04968	mg/L	99.4	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05	.0047	.05463	mg/L	99.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05	.0047	.05482	mg/L	100.2	70	130	0.35	20	

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ACZ Project ID: ***L11355***

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05024	mg/L	100.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0018	0.0018			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04686	mg/L	93.6	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	.0501	.09032	mg/L	80.4	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	.0501	.0904	mg/L	80.5	70	130	0.09	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05091	mg/L	101.8	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0018	0.0018			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00132	0.00132			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04952	mg/L	98.9	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.04973	mg/L	99.4	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.04994	mg/L	99.8	70	130	0.42	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341704													
WG341704ICV	ICV	04/08/13 12:53	WI121105-5	1.003		1.006	mg/L	100.3	90	110			
WG341704ICB	ICB	04/08/13 12:56				U	mg/L		-0.15	0.15			
WG341715													
WG341715LFB1	LFB	04/08/13 15:21	WI121218-3	1		1.025	mg/L	102.5	90	110			
L11354-05AS	AS	04/08/13 15:39	WI121218-3	1	.07	1.067	mg/L	99.7	90	110			
L11355-01DUP	DUP	04/08/13 15:41			.13	.11	mg/L				16.7	20	RA
WG341715LFB2	LFB	04/08/13 15:53	WI121218-3	1		.947	mg/L	94.7	90	110			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341806													
WG341806ICV	ICV	04/09/13 18:30	WI130404-1	.65228		.637	mg/L	97.7	90	110			
WG341806ICB	ICB	04/09/13 18:33				U	mg/L		-0.03	0.03			
WG341811													
WG341753LRB	LRB	04/09/13 22:09				U	mg/L		-0.03	0.03			
WG341753LFB	LFB	04/09/13 22:10	WI130403-2	.5		.497	mg/L	99.4	90	110			
L11355-01LFM	LFM	04/09/13 22:13	WI130403-2	.5	.14	.633	mg/L	98.6	90	110			
L11355-02DUP	DUP	04/09/13 22:15			.03	.032	mg/L				6.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	20		20.19	mg/L	101	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.9	0.9			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	99.97161		106.23	mg/L	106.3	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	99.97161	4.2	110.33	mg/L	106.2	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	99.97161	4.2	110.77	mg/L	106.6	85	115	0.4	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	20		19.82	mg/L	99.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	99.97161		100.4	mg/L	100.4	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	99.97161	7.5	109.9	mg/L	102.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	99.97161	7.5	109.7	mg/L	102.2	70	130	0.18	20	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		2.01	mg/L	100.5	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.3	0.3			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1.0009		1.07	mg/L	106.9	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1.0009	U	1.07	mg/L	106.9	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1.0009	U	1.08	mg/L	107.9	85	115	0.93	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.96	mg/L	98	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1.0009		1.04	mg/L	103.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1.0009	U	1.05	mg/L	104.9	70	130	0.96	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05427	mg/L	108.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04807	mg/L	96	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.05914	mg/L	118.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.05668	mg/L	113.2	70	130	4.25	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05104	mg/L	102.1	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.05232	mg/L	104.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	.0043	.05501	mg/L	101.3	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	.0043	.05469	mg/L	100.7	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02006		.02035	mg/L	101.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01001		.009423	mg/L	94.1	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.01001	U	.005196	mg/L	51.9	70	130			M2 ZA
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.01001	U	.005532	mg/L	55.3	70	130	6.26	20	M2 ZA

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.02006		.02076	mg/L	103.5	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.00015	0.00015			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00011	0.00011			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.01001		.01007	mg/L	100.6	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.01001	U	.00966	mg/L	96.5	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.01001	U	.009612	mg/L	96	70	130	0.5	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	100		101.6	mg/L	101.6	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.9	0.9			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	100.0416		105.12	mg/L	105.1	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	100.0416	86.3	185.13	mg/L	98.8	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	100.0416	86.3	186.25	mg/L	99.9	85	115	0.6	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		99.84	mg/L	99.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	100.0416		99.38	mg/L	99.3	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	100.0416	26.4	128.5	mg/L	102.1	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	100.0416	26.4	127.7	mg/L	101.3	70	130	0.62	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		1.977	mg/L	98.9	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.03	0.03			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	.5		.515	mg/L	103	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	.5	.02	.543	mg/L	104.6	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	.5	.02	.544	mg/L	104.8	85	115	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.971	mg/L	98.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.49	mg/L	98	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.25	.754	mg/L	100.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.25	.749	mg/L	99.8	70	130	0.67	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05047	mg/L	100.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0467	mg/L	93.3	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04916	mg/L	98.2	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04767	mg/L	95.2	70	130	3.08	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.05249	mg/L	105	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04929	mg/L	98.5	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.05052	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.05083	mg/L	101.6	70	130	0.61	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05005		.04775	mg/L	95.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04544	mg/L	90.8	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.05005	U	.04559	mg/L	91.1	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.05005	U	.04452	mg/L	89	70	130	2.37	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.0502	mg/L	100.4	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0003	0.0003			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00022	0.00022			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.05005		.04918	mg/L	98.3	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.05005	U	.04603	mg/L	92	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.05005	U	.04407	mg/L	88.1	70	130	4.35	20	

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ACZ Project ID: ***L11355***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		2.0389	mg/L	101.9	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.015	0.015			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	1		1.0356	mg/L	103.6	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	1	U	1.0421	mg/L	104.2	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	1	U	1.0477	mg/L	104.8	85	115	0.54	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9565	mg/L	97.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.015	0.015			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.011	0.011			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.9926	mg/L	99.3	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.012	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	.9962	mg/L	99.6	70	130	1.57	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04851	mg/L	97	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04753	mg/L	94.9	85	115			
L11353-03AS	AS	04/05/13 20:06	MS130329-1	.0501	U	.04829	mg/L	96.4	70	130			
L11353-03ASD	ASD	04/05/13 20:09	MS130329-1	.0501	U	.04833	mg/L	96.5	70	130	0.08	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341657													
WG341657ICV	ICV	04/05/13 23:11	MS130102-2	.05		.04831	mg/L	96.6	90	110			
WG341657ICB	ICB	04/05/13 23:14				U	mg/L		-0.0006	0.0006			
WG341531LRB	LRB	04/05/13 23:17				U	mg/L		-0.00044	0.00044			
WG341531LFB	LFB	04/05/13 23:20	MS130329-1	.0501		.049	mg/L	97.8	85	115			
L11355-02LFM	LFM	04/06/13 0:40	MS130329-1	.0501	.0109	.06146	mg/L	100.9	70	130			
L11355-02LFMD	LFMD	04/06/13 0:43	MS130329-1	.0501	.0109	.06156	mg/L	101.1	70	130	0.16	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341449													
WG341449ICV	ICV	04/04/13 1:06	II130114-3	2		2.049	mg/L	102.5	95	105			
WG341449ICB	ICB	04/04/13 1:10				U	mg/L		-0.03	0.03			
WG341449LFB	LFB	04/04/13 1:24	II130326-2	.5		.532	mg/L	106.4	85	115			
L11355-01AS	AS	04/04/13 1:38	II130326-2	.5	.01	.561	mg/L	110.2	85	115			
L11355-01ASD	ASD	04/04/13 1:41	II130326-2	.5	.01	.562	mg/L	110.4	85	115	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L11355***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.987	mg/L	99.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.516	mg/L	103.2	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	U	.516	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	U	.52	mg/L	102	70	130	0.77	20	

SPF Water Engineering ACZ Project ID: ***L11355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11355-01	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341871	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341811	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11355-02	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341811	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11355-03	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341871	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341811	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L11355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11355-04	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341971	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341871	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341811	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Boron, dissolved	M200.8 ICP-MS
Boron, total	M200.8 ICP-MS
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11355
Date Received: 04/01/2013 09:52
Received By: ksj
Date Printed: 4/1/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the sample identification and analyses requested section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
4113	1.6	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11355

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW
PO#: Calico Winter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW							
Bishop Well	3/26/13 17:00		5	X							
PW-1	3/26/13 11:40		5	X							
Poison Springs	3/26/13 18:30		5	X							
59760	3/26/13 13:40		5	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Note: included 3 unused sets of bottles for return. (from SHORT-HOLDS-WETCHEM).

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/28/13 16:00	[illegible]	4.1.13 9:50

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11355 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 12, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11356

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 01, 2013. This project has been assigned to ACZ's project number, L11356. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11356. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 12, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-1

ACZ Sample ID: ***L11356-01***
Date Sampled: *03/14/13 18:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 14:16	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 11:24	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 12:43	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-1

ACZ Sample ID: ***L11356-01***
Date Sampled: *03/14/13 18:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/08/13 18:14	jjc
Aluminum, total	M200.7 ICP	0.03	B		mg/L	0.03	0.2	04/06/13 7:30	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0004	B		mg/L	0.0004	0.002	04/05/13 20:42	msh
Antimony, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	04/06/13 1:50	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0312		*	mg/L	0.0002	0.001	04/05/13 20:42	msh
Arsenic, total	M200.8 ICP-MS	0.0306			mg/L	0.0002	0.001	04/06/13 1:50	pmc
Barium, dissolved	M200.7 ICP	0.030			mg/L	0.003	0.02	04/08/13 18:14	jjc
Barium, total	M200.7 ICP	0.029			mg/L	0.003	0.02	04/06/13 7:30	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:42	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:50	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 18:14	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:38	aeb
Boron, dissolved	M200.8 ICP-MS	0.063		*	mg/L	0.005	0.01	04/09/13 13:23	msh
Boron, total	M200.8 ICP-MS	0.07		*	mg/L	0.01	0.02	04/08/13 23:26	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:42	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:50	pmc
Calcium, dissolved	M200.7 ICP	44.7			mg/L	0.2	1	04/08/13 18:14	jjc
Calcium, total	M200.7 ICP	46.7			mg/L	0.2	1	04/06/13 7:30	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0005	0.002	04/05/13 20:42	msh
Chromium, total	M200.8 ICP-MS	0.0009	B		mg/L	0.0005	0.002	04/06/13 1:50	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00027	B		mg/L	0.00005	0.0003	04/05/13 20:42	msh
Cobalt, total	M200.8 ICP-MS	0.00016	B		mg/L	0.00005	0.0003	04/06/13 1:50	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:42	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:50	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:14	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:30	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/08/13 18:14	jjc
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/06/13 7:30	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:42	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:50	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/08/13 18:14	jjc
Lithium, total	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/06/13 7:30	aeb
Magnesium, dissolved	M200.7 ICP	8.7			mg/L	0.2	1	04/08/13 18:14	jjc
Magnesium, total	M200.7 ICP	9.1			mg/L	0.2	1	04/06/13 7:30	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:42	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:50	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 12:49	las
Mercury, total	M1631, Atomic Fluorescence	1.0	B	*	ng/L	0.4	1	04/11/13 12:17	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0037			mg/L	0.0005	0.003	04/05/13 20:42	msh
Molybdenum, total	M200.8 ICP-MS	0.0043			mg/L	0.0005	0.003	04/06/13 1:50	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:42	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:50	pmc
Potassium, dissolved	M200.7 ICP	6.1			mg/L	0.3	2	04/08/13 18:14	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-1

ACZ Sample ID: ***L11356-01***
Date Sampled: *03/14/13 18:00*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	6.4			mg/L	0.3	2	04/06/13 7:30	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:14	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:30	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0001	0.0003	04/05/13 20:42	msh
Selenium, total	M200.8 ICP-MS	0.0032			mg/L	0.0001	0.0003	04/06/13 1:50	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:42	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:50	pmc
Sodium, dissolved	M200.7 ICP	26.1			mg/L	0.3	2	04/08/13 18:14	jjc
Sodium, total	M200.7 ICP	27.4			mg/L	0.3	2	04/06/13 7:30	aeb
Strontium, dissolved	M200.7 ICP	0.21			mg/L	0.01	0.05	04/08/13 18:14	jjc
Strontium, total	M200.7 ICP	0.21			mg/L	0.01	0.05	04/06/13 7:30	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:42	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:50	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:42	msh
Tin, total	M200.8 ICP-MS	0.0001	B	*	mg/L	0.0001	0.0005	04/06/13 1:50	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/08/13 18:14	jjc
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:30	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0177			mg/L	0.0002	0.001	04/05/13 20:42	msh
Vanadium, total	M200.8 ICP-MS	0.0195			mg/L	0.0002	0.001	04/06/13 1:50	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/08/13 18:14	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:30	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	148			mg/L	1	7	04/12/13 8:41	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:47	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/09/13 18:50	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: WHISKEY SPRINGS

ACZ Sample ID: ***L11356-02***
Date Sampled: *03/17/13 16:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 14:28	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 12:55	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 11:36	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: WHISKEY SPRINGS

ACZ Sample ID: ***L11356-02***
Date Sampled: *03/17/13 16:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/08/13 18:17	jjc
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/06/13 7:33	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	04/05/13 20:45	msh
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	04/06/13 1:53	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0861		*	mg/L	0.0002	0.001	04/05/13 20:45	msh
Arsenic, total	M200.8 ICP-MS	0.0874			mg/L	0.0002	0.001	04/06/13 1:53	pmc
Barium, dissolved	M200.7 ICP	0.045			mg/L	0.003	0.02	04/08/13 18:17	jjc
Barium, total	M200.7 ICP	0.045			mg/L	0.003	0.02	04/06/13 7:33	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:45	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:53	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 18:17	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:41	aeb
Boron, dissolved	M200.8 ICP-MS	0.15		*	mg/L	0.01	0.02	04/09/13 13:32	msh
Boron, total	M200.8 ICP-MS	0.17		*	mg/L	0.03	0.05	04/08/13 23:29	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:45	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:53	pmc
Calcium, dissolved	M200.7 ICP	35.2			mg/L	0.2	1	04/08/13 18:17	jjc
Calcium, total	M200.7 ICP	37.1			mg/L	0.2	1	04/06/13 7:33	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 20:45	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:53	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00015	B		mg/L	0.00005	0.0003	04/05/13 20:45	msh
Cobalt, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:53	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:45	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:53	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:17	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:33	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/08/13 18:17	jjc
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/06/13 7:33	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:45	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:53	pmc
Lithium, dissolved	M200.7 ICP	0.10			mg/L	0.02	0.1	04/08/13 18:17	jjc
Lithium, total	M200.7 ICP	0.10			mg/L	0.02	0.1	04/06/13 7:33	aeb
Magnesium, dissolved	M200.7 ICP	6.0			mg/L	0.2	1	04/08/13 18:17	jjc
Magnesium, total	M200.7 ICP	6.3			mg/L	0.2	1	04/06/13 7:33	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:45	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:53	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 12:56	las
Mercury, total	M1631, Atomic Fluorescence	0.3	B		ng/L	0.2	0.5	04/11/13 12:24	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0199			mg/L	0.0005	0.003	04/05/13 20:45	msh
Molybdenum, total	M200.8 ICP-MS	0.0228			mg/L	0.0005	0.003	04/06/13 1:53	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:45	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:53	pmc
Potassium, dissolved	M200.7 ICP	5.7			mg/L	0.3	2	04/08/13 18:17	jjc

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: WHISKEY SPRINGS

ACZ Sample ID: ***L11356-02***
Date Sampled: *03/17/13 16:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	5.9			mg/L	0.3	2	04/06/13 7:33	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:17	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:33	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0022			mg/L	0.0001	0.0003	04/05/13 20:45	msh
Selenium, total	M200.8 ICP-MS	0.0021			mg/L	0.0001	0.0003	04/06/13 1:53	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:45	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:53	pmc
Sodium, dissolved	M200.7 ICP	68.1			mg/L	0.3	2	04/08/13 18:17	jjc
Sodium, total	M200.7 ICP	71.3			mg/L	0.3	2	04/06/13 7:33	aeb
Strontium, dissolved	M200.7 ICP	0.15			mg/L	0.01	0.05	04/08/13 18:17	jjc
Strontium, total	M200.7 ICP	0.15			mg/L	0.01	0.05	04/06/13 7:33	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:45	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:53	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:45	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:53	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/08/13 18:17	jjc
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/06/13 7:33	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0199			mg/L	0.0002	0.001	04/05/13 20:45	msh
Vanadium, total	M200.8 ICP-MS	0.0223			mg/L	0.0002	0.001	04/06/13 1:53	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/08/13 18:17	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:33	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	113			mg/L	1	7	04/12/13 8:41	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:49	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	04/09/13 18:51	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59766

ACZ Sample ID: ***L11356-03***
Date Sampled: *03/14/13 16:34*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 14:41	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 13:06	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 12:12	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59766

ACZ Sample ID: ***L11356-03***
Date Sampled: *03/14/13 16:34*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/08/13 18:26	jjc
Aluminum, total	M200.7 ICP	25.60			mg/L	0.03	0.2	04/06/13 7:36	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:48	msh
Antimony, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	04/06/13 2:09	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.204			mg/L	0.002	0.01	04/09/13 13:36	msh
Arsenic, total	M200.8 ICP-MS	0.276			mg/L	0.004	0.02	04/08/13 23:42	pmc
Barium, dissolved	M200.7 ICP	0.017	B		mg/L	0.003	0.02	04/08/13 18:26	jjc
Barium, total	M200.7 ICP	0.456			mg/L	0.003	0.02	04/06/13 7:36	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:48	msh
Beryllium, total	M200.8 ICP-MS	0.00302			mg/L	0.00005	0.0003	04/06/13 2:09	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 18:26	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:44	aeb
Boron, dissolved	M200.8 ICP-MS	0.106		*	mg/L	0.005	0.01	04/09/13 13:36	msh
Boron, total	M200.8 ICP-MS	0.13		*	mg/L	0.01	0.02	04/08/13 23:42	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:48	msh
Cadmium, total	M200.8 ICP-MS	0.0009			mg/L	0.0001	0.0005	04/06/13 2:09	pmc
Calcium, dissolved	M200.7 ICP	37.7			mg/L	0.2	1	04/08/13 18:26	jjc
Calcium, total	M200.7 ICP	49.8			mg/L	0.2	1	04/06/13 7:36	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 20:48	msh
Chromium, total	M200.8 ICP-MS	0.0100			mg/L	0.0005	0.002	04/06/13 2:09	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00108			mg/L	0.00005	0.0003	04/05/13 20:48	msh
Cobalt, total	M200.8 ICP-MS	0.00857			mg/L	0.00005	0.0003	04/06/13 2:09	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:48	msh
Copper, total	M200.8 ICP-MS	0.0190			mg/L	0.0005	0.003	04/06/13 2:09	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:26	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:36	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/08/13 18:26	jjc
Iron, total	M200.7 ICP	23.00			mg/L	0.02	0.05	04/06/13 7:36	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:48	msh
Lead, total	M200.8 ICP-MS	0.0190			mg/L	0.0001	0.0005	04/06/13 2:09	pmc
Lithium, dissolved	M200.7 ICP	0.56			mg/L	0.02	0.1	04/08/13 18:26	jjc
Lithium, total	M200.7 ICP	0.59			mg/L	0.02	0.1	04/06/13 7:36	aeb
Magnesium, dissolved	M200.7 ICP	3.1			mg/L	0.2	1	04/08/13 18:26	jjc
Magnesium, total	M200.7 ICP	7.0			mg/L	0.2	1	04/06/13 7:36	aeb
Manganese, dissolved	M200.8 ICP-MS	0.263			mg/L	0.005	0.03	04/09/13 13:36	msh
Manganese, total	M200.8 ICP-MS	0.73			mg/L	0.01	0.05	04/08/13 23:42	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	2.4			ng/L	0.4	1	04/10/13 13:03	las
Mercury, total	M1631, Atomic Fluorescence	133			ng/L	2	5	04/11/13 12:31	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0325			mg/L	0.0005	0.003	04/05/13 20:48	msh
Molybdenum, total	M200.8 ICP-MS	0.0342			mg/L	0.0005	0.003	04/06/13 2:09	pmc
Nickel, dissolved	M200.8 ICP-MS	0.0055			mg/L	0.0006	0.003	04/05/13 20:48	msh
Nickel, total	M200.8 ICP-MS	0.0128			mg/L	0.0006	0.003	04/06/13 2:09	pmc
Potassium, dissolved	M200.7 ICP	9.8			mg/L	0.3	2	04/08/13 18:26	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: 59766

ACZ Sample ID: ***L11356-03***
Date Sampled: *03/14/13 16:34*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	14.2			mg/L	0.3	2	04/06/13 7:36	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:26	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:36	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0009			mg/L	0.0001	0.0003	04/05/13 20:48	msh
Selenium, total	M200.8 ICP-MS	0.0011			mg/L	0.0001	0.0003	04/06/13 2:09	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:48	msh
Silver, total	M200.8 ICP-MS	0.00059			mg/L	0.00005	0.0003	04/06/13 2:09	pmc
Sodium, dissolved	M200.7 ICP	136			mg/L	0.3	2	04/08/13 18:26	jjc
Sodium, total	M200.7 ICP	141			mg/L	0.3	2	04/06/13 7:36	aeb
Strontium, dissolved	M200.7 ICP	0.13			mg/L	0.01	0.05	04/08/13 18:26	jjc
Strontium, total	M200.7 ICP	0.23			mg/L	0.01	0.05	04/06/13 7:36	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:48	msh
Thallium, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0001	0.0005	04/06/13 2:09	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/05/13 20:48	msh
Tin, total	M200.8 ICP-MS	0.0025		*	mg/L	0.0001	0.0005	04/06/13 2:09	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/08/13 18:26	jjc
Titanium, total	M200.7 ICP	0.827			mg/L	0.005	0.03	04/06/13 7:36	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0016			mg/L	0.0002	0.001	04/05/13 20:48	msh
Vanadium, total	M200.8 ICP-MS	0.0276			mg/L	0.0002	0.001	04/06/13 2:09	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/08/13 18:26	jjc
Zinc, total	M200.7 ICP	0.09			mg/L	0.01	0.05	04/06/13 7:36	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	107			mg/L	1	7	04/12/13 8:41	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.07	B	*	mg/L	0.05	0.5	04/08/13 15:50	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1.67			mg/L	0.03	0.2	04/09/13 21:51	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-4

ACZ Sample ID: ***L11356-04***
Date Sampled: *03/14/13 12:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 15:06	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 12:24	scp
Total Hot Plate Digestion	M200.2 ICP							04/05/13 13:18	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-4

ACZ Sample ID: ***L11356-04***
Date Sampled: *03/14/13 12:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.08	B		mg/L	0.03	0.2	04/08/13 18:30	jjc
Aluminum, total	M200.7 ICP	8.11			mg/L	0.03	0.2	04/06/13 7:40	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 20:58	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:12	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0130		*	mg/L	0.0002	0.001	04/05/13 20:58	msh
Arsenic, total	M200.8 ICP-MS	0.0183			mg/L	0.0002	0.001	04/06/13 2:12	pmc
Barium, dissolved	M200.7 ICP	0.004	B		mg/L	0.003	0.02	04/08/13 18:30	jjc
Barium, total	M200.7 ICP	0.024			mg/L	0.003	0.02	04/06/13 7:40	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 20:58	msh
Beryllium, total	M200.8 ICP-MS	0.00045			mg/L	0.00005	0.0003	04/06/13 2:12	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 18:30	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:47	aeb
Boron, dissolved	M200.8 ICP-MS	0.117		*	mg/L	0.005	0.01	04/09/13 13:39	msh
Boron, total	M200.8 ICP-MS	0.13		*	mg/L	0.03	0.05	04/08/13 23:45	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:58	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:12	pmc
Calcium, dissolved	M200.7 ICP	9.5			mg/L	0.2	1	04/08/13 18:30	jjc
Calcium, total	M200.7 ICP	14.7			mg/L	0.2	1	04/06/13 7:40	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 20:58	msh
Chromium, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0005	0.002	04/06/13 2:12	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00048			mg/L	0.00005	0.0003	04/05/13 20:58	msh
Cobalt, total	M200.8 ICP-MS	0.00044			mg/L	0.00005	0.0003	04/06/13 2:12	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 20:58	msh
Copper, total	M200.8 ICP-MS	0.0013	B		mg/L	0.0005	0.003	04/06/13 2:12	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:30	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:40	aeb
Iron, dissolved	M200.7 ICP	0.21			mg/L	0.02	0.05	04/08/13 18:30	jjc
Iron, total	M200.7 ICP	7.99			mg/L	0.02	0.05	04/06/13 7:40	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:58	msh
Lead, total	M200.8 ICP-MS	0.0088			mg/L	0.0001	0.0005	04/06/13 2:12	pmc
Lithium, dissolved	M200.7 ICP	0.10			mg/L	0.02	0.1	04/08/13 18:30	jjc
Lithium, total	M200.7 ICP	0.10			mg/L	0.02	0.1	04/06/13 7:40	aeb
Magnesium, dissolved	M200.7 ICP	0.5	B		mg/L	0.2	1	04/08/13 18:30	jjc
Magnesium, total	M200.7 ICP	1.9			mg/L	0.2	1	04/06/13 7:40	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0428			mg/L	0.0005	0.003	04/05/13 20:58	msh
Manganese, total	M200.8 ICP-MS	0.0971			mg/L	0.0005	0.003	04/06/13 2:12	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 13:09	las
Mercury, total	M1631, Atomic Fluorescence	13			ng/L	2	5	04/11/13 12:38	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0106			mg/L	0.0005	0.003	04/05/13 20:58	msh
Molybdenum, total	M200.8 ICP-MS	0.0122			mg/L	0.0005	0.003	04/06/13 2:12	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 20:58	msh
Nickel, total	M200.8 ICP-MS	0.0012	B		mg/L	0.0006	0.003	04/06/13 2:12	pmc
Potassium, dissolved	M200.7 ICP	1.1	B		mg/L	0.3	2	04/08/13 18:30	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: PW-4

ACZ Sample ID: ***L11356-04***
Date Sampled: *03/14/13 12:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1.4	B		mg/L	0.3	2	04/06/13 7:40	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:30	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:40	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 20:58	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 2:12	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 20:58	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:12	pmc
Sodium, dissolved	M200.7 ICP	190			mg/L	0.3	2	04/08/13 18:30	jjc
Sodium, total	M200.7 ICP	197			mg/L	0.3	2	04/06/13 7:40	aeb
Strontium, dissolved	M200.7 ICP	0.05	B		mg/L	0.01	0.05	04/08/13 18:30	jjc
Strontium, total	M200.7 ICP	0.07			mg/L	0.01	0.05	04/06/13 7:40	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 20:58	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:12	pmc
Tin, dissolved	M200.8 ICP-MS	0.0003	B	*	mg/L	0.0001	0.0005	04/05/13 20:58	msh
Tin, total	M200.8 ICP-MS	0.0005		*	mg/L	0.0001	0.0005	04/06/13 2:12	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/08/13 18:30	jjc
Titanium, total	M200.7 ICP	0.030	B		mg/L	0.005	0.03	04/06/13 7:40	aeb
Vanadium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/05/13 20:58	msh
Vanadium, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0002	0.001	04/06/13 2:12	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/08/13 18:30	jjc
Zinc, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/06/13 7:40	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	26			mg/L	1	7	04/12/13 8:42	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.12	B	*	mg/L	0.05	0.5	04/08/13 15:51	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.13			mg/L	0.01	0.05	04/09/13 18:54	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-4

ACZ Sample ID: ***L11356-05***
Date Sampled: *03/14/13 14:25*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 15:31	lhb
Total Hot Plate Digestion	M200.2 ICP							04/05/13 13:30	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 12:36	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-4

ACZ Sample ID: ***L11356-05***
Date Sampled: *03/14/13 14:25*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.03	B		mg/L	0.03	0.2	04/08/13 18:33	jjc
Aluminum, total	M200.7 ICP	1.68			mg/L	0.03	0.2	04/06/13 7:43	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/05/13 21:08	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:15	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0119		*	mg/L	0.0002	0.001	04/05/13 21:08	msh
Arsenic, total	M200.8 ICP-MS	0.0118			mg/L	0.0002	0.001	04/06/13 2:15	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	04/08/13 18:33	jjc
Barium, total	M200.7 ICP	0.010	B		mg/L	0.003	0.02	04/06/13 7:43	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/05/13 21:08	msh
Beryllium, total	M200.8 ICP-MS	0.00028	B		mg/L	0.00005	0.0003	04/06/13 2:15	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 18:33	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/08/13 14:50	aeb
Boron, dissolved	M200.8 ICP-MS	0.126		*	mg/L	0.005	0.01	04/09/13 13:42	msh
Boron, total	M200.8 ICP-MS	0.13		*	mg/L	0.03	0.05	04/08/13 23:48	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 21:08	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:15	pmc
Calcium, dissolved	M200.7 ICP	3.6			mg/L	0.2	1	04/08/13 18:33	jjc
Calcium, total	M200.7 ICP	4.8			mg/L	0.2	1	04/06/13 7:43	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/05/13 21:08	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 2:15	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00024	B		mg/L	0.00005	0.0003	04/05/13 21:08	msh
Cobalt, total	M200.8 ICP-MS	0.00015	B		mg/L	0.00005	0.0003	04/06/13 2:15	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/05/13 21:08	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:15	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:33	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:43	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/08/13 18:33	jjc
Iron, total	M200.7 ICP	0.59			mg/L	0.02	0.05	04/06/13 7:43	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 21:08	msh
Lead, total	M200.8 ICP-MS	0.0012			mg/L	0.0001	0.0005	04/06/13 2:15	pmc
Lithium, dissolved	M200.7 ICP	0.09	B		mg/L	0.02	0.1	04/08/13 18:33	jjc
Lithium, total	M200.7 ICP	0.09	B		mg/L	0.02	0.1	04/06/13 7:43	aeb
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	04/08/13 18:33	jjc
Magnesium, total	M200.7 ICP	0.3	B		mg/L	0.2	1	04/06/13 7:43	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0046			mg/L	0.0005	0.003	04/05/13 21:08	msh
Manganese, total	M200.8 ICP-MS	0.0147			mg/L	0.0005	0.003	04/06/13 2:15	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 13:16	las
Mercury, total	M1631, Atomic Fluorescence	4			ng/L	1	3	04/11/13 12:44	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0088			mg/L	0.0005	0.003	04/05/13 21:08	msh
Molybdenum, total	M200.8 ICP-MS	0.0105			mg/L	0.0005	0.003	04/06/13 2:15	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/05/13 21:08	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:15	pmc
Potassium, dissolved	M200.7 ICP	0.7	B		mg/L	0.3	2	04/08/13 18:33	jjc

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GW-4

ACZ Sample ID: ***L11356-05***
Date Sampled: *03/14/13 14:25*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	0.8	B		mg/L	0.3	2	04/06/13 7:43	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/08/13 18:33	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 7:43	aeb
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/05/13 21:08	msh
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 2:15	pmc
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.00005	0.0003	04/05/13 21:08	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:15	pmc
Sodium, dissolved	M200.7 ICP	147			mg/L	0.3	2	04/08/13 18:33	jjc
Sodium, total	M200.7 ICP	154			mg/L	0.3	2	04/06/13 7:43	aeb
Strontium, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/08/13 18:33	jjc
Strontium, total	M200.7 ICP	0.03	B		mg/L	0.01	0.05	04/06/13 7:43	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/05/13 21:08	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:15	pmc
Tin, dissolved	M200.8 ICP-MS	0.0001	B	*	mg/L	0.0001	0.0005	04/05/13 21:08	msh
Tin, total	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0005	04/06/13 2:15	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/08/13 18:33	jjc
Titanium, total	M200.7 ICP	0.013	B		mg/L	0.005	0.03	04/06/13 7:43	aeb
Vanadium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/05/13 21:08	msh
Vanadium, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0002	0.001	04/06/13 2:15	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/08/13 18:33	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/06/13 7:43	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	9			mg/L	1	7	04/12/13 8:42	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	0.08	B	*	mg/L	0.05	0.5	04/08/13 15:52	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	04/09/13 18:57	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER TRIP BLANK

ACZ Sample ID: ***L11356-06***
Date Sampled: *03/14/13 17:39*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/11/13 10:24	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11356***

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		2.04	mg/L	102	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.09	0.09			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		1.057	mg/L	105.7	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	U	1.056	mg/L	105.6	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	U	1.046	mg/L	104.6	85	115	0.95	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.037	mg/L	101.9	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.09	0.09			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.066	0.066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.02	mg/L	102	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.12	1.394	mg/L	127.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.12	1.404	mg/L	128.4	70	130	0.71	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02		.02077	mg/L	103.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0012	0.0012			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01		.00983	mg/L	98.3	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.01	U	.00993	mg/L	99.3	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.01	U	.01	mg/L	100	70	130	0.7	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02		.01982	mg/L	99.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0012	0.0012			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00088	0.00088			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01		.01063	mg/L	106.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.01	.0007	.0112	mg/L	105	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.01	.0007	.01137	mg/L	106.7	70	130	1.51	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05207	mg/L	104.1	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04869	mg/L	97.3	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	.2391	.2721	mg/L	65.9	70	130			M3
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	.2391	.2734	mg/L	68.5	70	130	0.48	20	M3
WG341765													
WG341765ICV	ICV	04/09/13 13:13	MS130402-2	.05		.05354	mg/L	107.1	90	110			
WG341765ICB	ICB	04/09/13 13:16				U	mg/L		-0.0006	0.0006			
WG341765LFB	LFB	04/09/13 13:19	MS130329-1	.05005		.0472	mg/L	94.3	85	115			
L11356-01AS	AS	04/09/13 13:26	MS130329-1	.5005	.028	.4919	mg/L	92.7	70	130			
L11356-01ASD	ASD	04/09/13 13:29	MS130329-1	.5005	.028	.5199	mg/L	98.3	70	130	5.53	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05112	mg/L	102.2	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05261	mg/L	105.1	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	.0874	.1369	mg/L	98.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	.0874	.1372	mg/L	99.5	70	130	0.22	20	
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.05		.05029	mg/L	100.6	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.05005		.05142	mg/L	102.7	85	115			
L11356-02LFM	LFM	04/08/13 23:37	MS130329-1	.05005	.08	.127	mg/L	93.9	70	130			
L11356-02LFMD	LFMD	04/08/13 23:40	MS130329-1	.05005	.08	.129	mg/L	97.9	70	130	1.56	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.96	mg/L	98	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.009	0.009			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	.5		.4936	mg/L	98.7	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	.5	.045	.5373	mg/L	98.5	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	.5	.045	.5396	mg/L	98.9	85	115	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9622	mg/L	98.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.009	0.009			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.0066	0.0066			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.4846	mg/L	96.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.052	.5464	mg/L	98.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.052	.5452	mg/L	98.6	70	130	0.22	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04983	mg/L	99.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04832	mg/L	96.4	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.0501	U	.03977	mg/L	79.4	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.0501	U	.04077	mg/L	81.4	70	130	2.48	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04815	mg/L	96.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.05027	mg/L	100.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	U	.04927	mg/L	98.3	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	U	.04989	mg/L	99.6	70	130	1.25	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		2.044	mg/L	102.2	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.12	0.12			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		1.051	mg/L	105.1	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	U	.992	mg/L	99.2	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	U	.871	mg/L	87.1	85	115	12.99	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341676													
WG341676ICV	ICV	04/08/13 13:07	II130114-4	2		1.996	mg/L	99.8	95	105			
WG341676ICB	ICB	04/08/13 13:11				U	mg/L		-0.12	0.12			
WG341599LRB	LRB	04/08/13 13:23				U	mg/L		-0.088	0.088			
WG341599LFB	LFB	04/08/13 13:26	II130326-2	1		1.051	mg/L	105.1	85	115			
L11355-04LFM	LFM	04/08/13 14:25	II130326-2	1	U	1.066	mg/L	106.6	70	130			
L11355-04LFMD	LFMD	04/08/13 14:28	II130326-2	1	U	1.009	mg/L	100.9	70	130	5.49	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Boron, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341765													
WG341765ICV	ICV	04/09/13 13:13	MS130402-2	.02		.01993	mg/L	99.7	90	110			
WG341765ICB	ICB	04/09/13 13:16				U	mg/L		-0.0015	0.0015			
WG341765LFB	LFB	04/09/13 13:19	MS130329-1	.01001		.00888	mg/L	88.7	85	115			
L11356-01AS	AS	04/09/13 13:26	MS130329-1	.1001	.063	.1499	mg/L	86.8	70	130			
L11356-01ASD	ASD	04/09/13 13:29	MS130329-1	.1001	.063	.1566	mg/L	93.5	70	130	4.37	20	

Boron, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.02		.01946	mg/L	97.3	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.01001		.00947	mg/L	94.6	85	115			
L11356-02LFM	LFM	04/08/13 23:37	MS130329-1	.01001	.17	.17	mg/L	0	70	130			M3
L11356-02LFMD	LFMD	04/08/13 23:40	MS130329-1	.01001	.17	.177	mg/L	69.9	70	130	4.03	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05092	mg/L	101.8	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.0479	mg/L	95.6	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.0501	U	.04836	mg/L	96.5	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.0501	U	.04789	mg/L	95.6	70	130	0.98	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05046	mg/L	100.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.051	mg/L	101.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	U	.04966	mg/L	99.1	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	U	.05026	mg/L	100.3	70	130	1.2	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	100		97.94	mg/L	97.9	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.6	0.6			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	67.95918		70.32	mg/L	103.5	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	67.95918	35.2	103.1	mg/L	99.9	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	67.95918	35.2	103.3	mg/L	100.2	85	115	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		98.44	mg/L	98.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	67.95918		71.19	mg/L	104.8	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	67.95918	40.8	112	mg/L	104.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	67.95918	40.8	111.9	mg/L	104.6	70	130	0.09	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04865	mg/L	97.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.047	mg/L	93.9	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	U	.04411	mg/L	88.1	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	U	.04418	mg/L	88.3	70	130	0.16	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04901	mg/L	98	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05044	mg/L	100.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04917	mg/L	98.2	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.049	mg/L	97.9	70	130	0.35	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05064	mg/L	101.3	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04932	mg/L	98.5	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	.00108	.04893	mg/L	95.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	.00108	.04871	mg/L	95.2	70	130	0.45	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04878	mg/L	97.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04948	mg/L	98.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04938	mg/L	98.7	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05004	mg/L	100	70	130	1.33	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04843	mg/L	96.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0462	mg/L	92.3	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	U	.04158	mg/L	83.1	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	U	.0415	mg/L	82.9	70	130	0.19	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05037	mg/L	100.7	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05083	mg/L	101.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04849	mg/L	96.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04862	mg/L	97.1	70	130	0.27	20	

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		2.02	mg/L	101	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.3	0.3			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		1.01	mg/L	101	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	U	1.01	mg/L	101	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	U	1.01	mg/L	101	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		2.07	mg/L	103.5	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.03	mg/L	103	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.04	mg/L	104	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	1.02	mg/L	102	70	130	1.94	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.993	mg/L	99.7	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.06	0.06			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		1.019	mg/L	101.9	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	U	1.009	mg/L	100.9	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	U	1.014	mg/L	101.4	85	115	0.49	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		1.021	mg/L	102.1	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.128	mg/L	107.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.115	mg/L	106.5	70	130	1.16	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04931	mg/L	98.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04579	mg/L	91.5	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	U	.04735	mg/L	94.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	U	.04667	mg/L	93.2	70	130	1.45	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05165	mg/L	103.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.0515	mg/L	102.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04893	mg/L	97.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04923	mg/L	98.4	70	130	0.61	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.984	mg/L	99.2	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.06	0.06			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		.975	mg/L	97.5	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	.1	1.072	mg/L	97.2	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	.1	1.072	mg/L	97.2	85	115	0	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.991	mg/L	99.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.06	0.06			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.044	0.044			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.974	mg/L	97.4	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	.05	1.055	mg/L	100.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	.05	1.042	mg/L	99.2	70	130	1.24	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	100		101.1	mg/L	101.1	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.6	0.6			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	49.99941		51.27	mg/L	102.5	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	49.99941	6	56.76	mg/L	101.5	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	49.99941	6	56.55	mg/L	101.1	85	115	0.37	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		100.67	mg/L	100.7	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.6	0.6			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.44	0.44			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	49.99941		51.43	mg/L	102.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	49.99941	7	58.77	mg/L	103.5	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	49.99941	7	58.85	mg/L	103.7	70	130	0.14	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05183	mg/L	103.7	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04914	mg/L	98.2	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	.2695	.3191	mg/L	99.1	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	.2695	.3194	mg/L	99.7	70	130	0.09	20	
WG341765													
WG341765ICV	ICV	04/09/13 13:13	MS130402-2	.05		.05216	mg/L	104.3	90	110			
WG341765ICB	ICB	04/09/13 13:16				U	mg/L		-0.0015	0.0015			
WG341765LFB	LFB	04/09/13 13:19	MS130329-1	.05005		.04648	mg/L	92.9	85	115			
L11356-01AS	AS	04/09/13 13:26	MS130329-1	.5005	U	.4453	mg/L	89	70	130			
L11356-01ASD	ASD	04/09/13 13:29	MS130329-1	.5005	U	.4627	mg/L	92.4	70	130	3.83	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04949	mg/L	99	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05001	mg/L	99.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.05001	mg/L	99.9	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05033	mg/L	100.6	70	130	0.64	20	
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.05		.05104	mg/L	102.1	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.05005		.05115	mg/L	102.2	85	115			
L11356-02LFM	LFM	04/08/13 23:37	MS130329-1	.05005	U	.052	mg/L	103.9	70	130			
L11356-02LFMD	LFMD	04/08/13 23:40	MS130329-1	.05005	U	.051	mg/L	101.9	70	130	1.94	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341819													
WG341819CCV1	CCV	04/10/13 10:55	HG130219-7	5		3.94	ng/L	78.8	76.5	123.4			
WG341819CCB1	CCB	04/10/13 11:02				U	ng/L		-0.5	0.5			
WG341819LFB	LFB	04/10/13 11:09	HG130219-8	2		1.62	ng/L	81	71	125			
L11354-01MS	MS	04/10/13 11:41	HG2XPREP	8	U	3.22	ng/L	80.5	71	125			
L11354-01MSD	MSD	04/10/13 11:48	HG2XPREP	8	U	3.52	ng/L	88	71	125	8.9	24	
WG341819CCV2	CCV	04/10/13 11:55	HG130219-7	5		4.23	ng/L	84.6	76.5	123.4			
WG341819CCB2	CCB	04/10/13 12:02				U	ng/L		-0.5	0.5			
WG341819CCV3	CCV	04/10/13 12:36	HG130219-7	5		4.03	ng/L	80.6	76.5	123.4			
WG341819CCB3	CCB	04/10/13 12:42				U	ng/L		-0.5	0.5			
WG341819CCV4	CCV	04/10/13 13:23	HG130219-7	5		4.12	ng/L	82.4	76.5	123.4			
WG341819CCB4	CCB	04/10/13 13:30				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L11356***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341871													
WG341871CCV1	CCV	04/11/13 10:02	HG130219-7	5		4.26	ng/L	85.2	76.5	123.4			
WG341871CCB1	CCB	04/11/13 10:09				U	ng/L		-0.5	0.5			
WG341871LFB	LFB	04/11/13 10:16	HG130219-8	2		1.69	ng/L	84.5	71	125			
WG341871CCV2	CCV	04/11/13 10:58	HG130219-7	5		4.37	ng/L	87.4	76.5	123.4			
WG341871CCB2	CCB	04/11/13 11:05				U	ng/L		-0.5	0.5			
L11355-01MS	MS	04/11/13 11:19	HG2XPREP	8	.8	4.41	ng/L	90.3	71	125			
L11355-01MSD	MSD	04/11/13 11:25	HG2XPREP	8	.8	4.2	ng/L	85	71	125	4.88	24	
WG341871CCV3	CCV	04/11/13 12:04	HG130219-7	5		4.45	ng/L	89	76.5	123.4			
WG341871CCB3	CCB	04/11/13 12:11				U	ng/L		-0.5	0.5			
WG341871CCV4	CCV	04/11/13 12:51	HG130219-7	5		4.65	ng/L	93	76.5	123.4			
WG341871CCB4	CCB	04/11/13 12:58				.22	ng/L		-0.5	0.5			
WG341871CCV5	CCV	04/11/13 14:09	HG130219-7	5		4.43	ng/L	88.6	76.5	123.4			
WG341871CCB5	CCB	04/11/13 14:16				U	ng/L		-0.5	0.5			
WG341871CCV6	CCV	04/11/13 14:43	HG130219-7	5		3.97	ng/L	79.4	76.5	123.4			
WG341871CCB6	CCB	04/11/13 14:50				U	ng/L		-0.5	0.5			
WG341871CCV7	CCV	04/11/13 15:31	HG130219-7	5		4.39	ng/L	87.8	76.5	123.4			
WG341871CCB7	CCB	04/11/13 15:38				U	ng/L		-0.5	0.5			
WG341871CCV8	CCV	04/11/13 16:10	HG130219-7	5		4.53	ng/L	90.6	76.5	123.4			
WG341871CCB8	CCB	04/11/13 16:17				.23	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02004		.01896	mg/L	94.6	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0015	0.0015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05		.04597	mg/L	91.9	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05	.0325	.08031	mg/L	95.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05	.0325	.07887	mg/L	92.7	70	130	1.81	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02004		.01976	mg/L	98.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05		.05092	mg/L	101.8	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05	.0228	.0725	mg/L	99.4	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05	.0228	.07201	mg/L	98.4	70	130	0.68	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05024	mg/L	100.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0018	0.0018			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04686	mg/L	93.6	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	.0055	.04734	mg/L	83.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	.0055	.04715	mg/L	83.2	70	130	0.4	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05077	mg/L	101.5	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0018	0.0018			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00132	0.00132			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04972	mg/L	99.3	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04797	mg/L	95.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.04743	mg/L	94.8	70	130	1.13	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341704													
WG341704ICV	ICV	04/08/13 12:53	WI121105-5	1.003		1.006	mg/L	100.3	90	110			
WG341704ICB	ICB	04/08/13 12:56				U	mg/L		-0.15	0.15			
WG341715													
WG341715LFB1	LFB	04/08/13 15:21	WI121218-3	1		1.025	mg/L	102.5	90	110			
L11354-05AS	AS	04/08/13 15:39	WI121218-3	1	.07	1.067	mg/L	99.7	90	110			
L11355-01DUP	DUP	04/08/13 15:41			.13	.11	mg/L				16.7	20	RA
WG341715LFB2	LFB	04/08/13 15:53	WI121218-3	1		.947	mg/L	94.7	90	110			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341806													
WG341806ICV	ICV	04/09/13 18:30	WI130404-1	.65228		.637	mg/L	97.7	90	110			
WG341806ICB	ICB	04/09/13 18:33				U	mg/L		-0.03	0.03			
WG341752LRB	LRB	04/09/13 18:34				U	mg/L		-0.03	0.03			
WG341752LFB	LFB	04/09/13 18:35	WI130403-2	.5		.491	mg/L	98.2	90	110			
L11353-04DUP	DUP	04/09/13 18:40			.02	.023	mg/L				14	20	RA
L11356-04DUP	DUP	04/09/13 18:55			.13	.143	mg/L				9.5	20	
L11353-01LFM	LFM	04/09/13 21:50	WI130403-2	.5	.48	1.033	mg/L	110.6	90	110			M1
L11356-03LFM	LFM	04/09/13 21:52	WI130403-2	.5	1.67	2.201	mg/L	106.2	90	110			

SPF Water Engineering

ACZ Project ID: ***L11356***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	20		19.88	mg/L	99.4	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.9	0.9			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	99.97161		101.1	mg/L	101.1	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	99.97161	5.7	106.1	mg/L	100.4	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	99.97161	5.7	105.9	mg/L	100.2	85	115	0.19	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	20		19.82	mg/L	99.1	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	99.97161		100.4	mg/L	100.4	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	99.97161	7.5	109.9	mg/L	102.4	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	99.97161	7.5	109.7	mg/L	102.2	70	130	0.18	20	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.97	mg/L	98.5	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.3	0.3			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1.0009		1.02	mg/L	101.9	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1.0009	U	1.02	mg/L	101.9	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1.0009	U	1.02	mg/L	101.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.96	mg/L	98	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.3	0.3			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.22	0.22			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1.0009		1.04	mg/L	103.9	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1.0009	U	1.05	mg/L	104.9	70	130	0.96	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05427	mg/L	108.5	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04807	mg/L	96	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	.0009	.05523	mg/L	108.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	.0009	.05581	mg/L	109.7	70	130	1.04	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05106	mg/L	102.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04854	mg/L	97	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	.0021	.05027	mg/L	96.2	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	.0021	.05039	mg/L	96.5	70	130	0.24	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.02006		.02035	mg/L	101.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.00015	0.00015			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.01001		.009423	mg/L	94.1	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.01001	U	.005972	mg/L	59.7	70	130			MA
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.01001	U	.007262	mg/L	72.5	70	130	19.5	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02006		.02046	mg/L	102	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01001		.01027	mg/L	102.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.01001	U	.009622	mg/L	96.1	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.01001	U	.009805	mg/L	98	70	130	1.88	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	100		99.83	mg/L	99.8	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.9	0.9			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	100.0416		100.8	mg/L	100.8	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	100.0416	68.1	165.8	mg/L	97.7	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	100.0416	68.1	165.6	mg/L	97.5	85	115	0.12	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	100		99.84	mg/L	99.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.9	0.9			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.66	0.66			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	100.0416		99.38	mg/L	99.3	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	100.0416	26.4	128.5	mg/L	102.1	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	100.0416	26.4	127.7	mg/L	101.3	70	130	0.62	20	

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ACZ Project ID: ***L11356***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.985	mg/L	99.3	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.03	0.03			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	.5		.505	mg/L	101	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	.5	.15	.648	mg/L	99.6	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	.5	.15	.65	mg/L	100	85	115	0.31	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.971	mg/L	98.6	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.49	mg/L	98	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	.25	.754	mg/L	100.8	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	.25	.749	mg/L	99.8	70	130	0.67	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.05047	mg/L	100.9	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.0467	mg/L	93.3	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	U	.0483	mg/L	96.5	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	U	.04813	mg/L	96.2	70	130	0.35	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05294	mg/L	105.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05149	mg/L	102.9	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04947	mg/L	98.8	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.0496	mg/L	99.1	70	130	0.26	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05005		.04775	mg/L	95.4	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0003	0.0003			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.05005		.04544	mg/L	90.8	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.05005	U	.04535	mg/L	90.6	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.05005	U	.045	mg/L	89.9	70	130	0.77	20	

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ACZ Project ID: ***L11356***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04938	mg/L	98.8	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05065	mg/L	101.2	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.05005	U	.04968	mg/L	99.3	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.05005	U	.05032	mg/L	100.5	70	130	1.28	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.9712	mg/L	98.6	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.015	0.015			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	1		.9878	mg/L	98.8	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	1	U	.9854	mg/L	98.5	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	1	U	.9876	mg/L	98.8	85	115	0.22	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.9565	mg/L	97.8	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.015	0.015			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.011	0.011			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	1		.9926	mg/L	99.3	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	1	U	1.012	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	1	U	.9962	mg/L	99.6	70	130	1.57	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341627													
WG341627ICV	ICV	04/05/13 19:46	MS130402-2	.05		.04851	mg/L	97	90	110			
WG341627ICB	ICB	04/05/13 19:49				U	mg/L		-0.0006	0.0006			
WG341627LFB	LFB	04/05/13 19:53	MS130329-1	.0501		.04753	mg/L	94.9	85	115			
L11356-03AS	AS	04/05/13 20:51	MS130329-1	.0501	.0016	.04761	mg/L	91.8	70	130			
L11356-03ASD	ASD	04/05/13 20:55	MS130329-1	.0501	.0016	.04782	mg/L	92.3	70	130	0.44	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04843	mg/L	96.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.04989	mg/L	99.6	85	115			
L11356-02LFM	LFM	04/06/13 2:03	MS130329-1	.0501	.0223	.07208	mg/L	99.4	70	130			
L11356-02LFMD	LFMD	04/06/13 2:06	MS130329-1	.0501	.0223	.07206	mg/L	99.3	70	130	0.03	20	

SPF Water Engineering

ACZ Project ID: ***L11356***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341697													
WG341697ICV	ICV	04/08/13 17:53	II130114-3	2		1.965	mg/L	98.3	95	105			
WG341697ICB	ICB	04/08/13 17:59				U	mg/L		-0.03	0.03			
WG341697LFB	LFB	04/08/13 18:11	II130326-2	.5		.504	mg/L	100.8	85	115			
L11356-02AS	AS	04/08/13 18:20	II130326-2	.5	U	.507	mg/L	101.4	85	115			
L11356-02ASD	ASD	04/08/13 18:23	II130326-2	.5	U	.502	mg/L	100.4	85	115	0.99	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341637													
WG341637ICV	ICV	04/06/13 5:53	II130114-4	2		1.987	mg/L	99.4	95	105			
WG341637ICB	ICB	04/06/13 5:59				U	mg/L		-0.03	0.03			
WG341599LRB	LRB	04/06/13 6:12				U	mg/L		-0.022	0.022			
WG341599LFB	LFB	04/06/13 6:15	II130326-2	.5		.516	mg/L	103.2	85	115			
L11355-04LFM	LFM	04/06/13 7:18	II130326-2	.5	U	.516	mg/L	101.2	70	130			
L11355-04LFMD	LFMD	04/06/13 7:27	II130326-2	.5	U	.52	mg/L	102	70	130	0.77	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L11356***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11356-01	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341871	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341627	Silver, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11356-02	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341627	Silver, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG341806	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11356-03	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341627	Silver, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L11356***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11356-04	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341627	Silver, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11356-05	WG341627	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341737	Boron, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG341819	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341627	Silver, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Boron, dissolved	M200.8 ICP-MS
Boron, total	M200.8 ICP-MS
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11356
Date Received: 04/01/2013 09:53
Received By: ksj
Date Printed: 4/1/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the relinquished by section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3746	4.7	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11356

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico Winter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SPF-2013-GW							
GW-1	3/14/13 18:00		5	X							
Whiskey Springs	3/17/13 16:30		5	X							
59766	3/14/13 16:34		5	X							
PW-4	3/14/13 12:40		5	X							
GW-4	3/14/13 14:25		5	X							
Transfer Trip Blank	3/14/13 17:39										

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe [redacted]	3/28/13 16:00	[illegible]	4.1.13 9:53

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11356 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 11, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico Winter Sampling
ACZ Project ID: L11357

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 01, 2013. This project has been assigned to ACZ's project number, L11357. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L11357. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 11, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L11357-01***
Date Sampled: *03/13/13 14:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 15:44	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 14:33	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 12:48	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L11357-01***
Date Sampled: *03/13/13 14:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.11	B		mg/L	0.03	0.2	04/03/13 23:12	aeb
Aluminum, total	M200.7 ICP	0.04	B		mg/L	0.03	0.2	04/09/13 9:40	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:14	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:18	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0607			mg/L	0.0002	0.001	04/06/13 1:14	msh
Arsenic, total	M200.8 ICP-MS	0.0610			mg/L	0.0002	0.001	04/06/13 2:18	pmc
Barium, dissolved	M200.7 ICP	0.012	B		mg/L	0.003	0.02	04/03/13 23:12	aeb
Barium, total	M200.7 ICP	0.012	B		mg/L	0.003	0.02	04/09/13 9:40	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:14	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:18	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:12	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 9:40	aeb
Boron, dissolved	M200.8 ICP-MS	0.089		*	mg/L	0.005	0.01	04/09/13 13:45	msh
Boron, total	M200.8 ICP-MS	0.10		*	mg/L	0.03	0.05	04/08/13 23:50	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:14	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:18	pmc
Calcium, dissolved	M200.7 ICP	28.0			mg/L	0.2	1	04/03/13 23:12	aeb
Calcium, total	M200.7 ICP	25.5			mg/L	0.2	1	04/09/13 9:40	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:14	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 2:18	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00013	B		mg/L	0.00005	0.0003	04/06/13 1:14	msh
Cobalt, total	M200.8 ICP-MS	0.00007	B		mg/L	0.00005	0.0003	04/06/13 2:18	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:14	msh
Copper, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.003	04/06/13 2:18	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:56	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:40	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:12	aeb
Iron, total	M200.7 ICP	0.04	B		mg/L	0.02	0.05	04/09/13 9:40	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:14	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:18	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 23:12	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 9:40	aeb
Magnesium, dissolved	M200.7 ICP	16.3			mg/L	0.2	1	04/03/13 23:12	aeb
Magnesium, total	M200.7 ICP	15.4			mg/L	0.2	1	04/09/13 9:40	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0033			mg/L	0.0005	0.003	04/06/13 1:14	msh
Manganese, total	M200.8 ICP-MS	0.0126			mg/L	0.0005	0.003	04/06/13 2:18	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 9:51	las
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/08/13 10:22	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0132			mg/L	0.0005	0.003	04/06/13 1:14	msh
Molybdenum, total	M200.8 ICP-MS	0.0150			mg/L	0.0005	0.003	04/06/13 2:18	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:14	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:18	pmc
Potassium, dissolved	M200.7 ICP	9.9			mg/L	0.3	2	04/03/13 23:12	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L11357-01***
Date Sampled: *03/13/13 14:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	9.2			mg/L	0.3	2	04/09/13 9:40	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:12	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:40	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0041			mg/L	0.0001	0.0003	04/06/13 1:14	msh
Selenium, total	M200.8 ICP-MS	0.0038			mg/L	0.0001	0.0003	04/06/13 2:18	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:14	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:18	pmc
Sodium, dissolved	M200.7 ICP	49.8		*	mg/L	0.3	2	04/03/13 23:12	aeb
Sodium, total	M200.7 ICP	45.6			mg/L	0.3	2	04/09/13 9:40	aeb
Strontium, dissolved	M200.7 ICP	0.14			mg/L	0.01	0.05	04/03/13 23:12	aeb
Strontium, total	M200.7 ICP	0.14			mg/L	0.01	0.05	04/09/13 9:40	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:14	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:18	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:14	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 2:18	pmc
Titanium, dissolved	M200.7 ICP	0.007	B		mg/L	0.005	0.03	04/03/13 23:12	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 9:40	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0360			mg/L	0.0002	0.001	04/06/13 1:14	msh
Vanadium, total	M200.8 ICP-MS	0.0401			mg/L	0.0002	0.001	04/06/13 2:18	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:12	aeb
Zinc, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	04/09/13 9:40	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	137			mg/L	1	7	04/11/13 13:03	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:54	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.09			mg/L	0.01	0.05	04/09/13 18:58	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L11357-02***
Date Sampled: *03/13/13 16:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 15:57	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 15:08	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:00	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L11357-02***
Date Sampled: *03/13/13 16:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:22	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 9:49	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:24	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:22	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0433			mg/L	0.0002	0.001	04/06/13 1:24	msh
Arsenic, total	M200.8 ICP-MS	0.0445			mg/L	0.0002	0.001	04/06/13 2:22	pmc
Barium, dissolved	M200.7 ICP	0.007	B		mg/L	0.003	0.02	04/03/13 23:22	aeb
Barium, total	M200.7 ICP	0.008	B		mg/L	0.003	0.02	04/09/13 9:49	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:24	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:22	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:22	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 9:49	aeb
Boron, dissolved	M200.8 ICP-MS	0.095		*	mg/L	0.005	0.01	04/09/13 13:55	msh
Boron, total	M200.8 ICP-MS	0.10		*	mg/L	0.03	0.05	04/08/13 23:53	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:24	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:22	pmc
Calcium, dissolved	M200.7 ICP	28.2			mg/L	0.2	1	04/03/13 23:22	aeb
Calcium, total	M200.7 ICP	26.3			mg/L	0.2	1	04/09/13 9:49	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0005	0.002	04/06/13 1:24	msh
Chromium, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	04/06/13 2:22	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00017	B		mg/L	0.00005	0.0003	04/06/13 1:24	msh
Cobalt, total	M200.8 ICP-MS	0.00009	B		mg/L	0.00005	0.0003	04/06/13 2:22	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:24	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:22	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 2:59	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:49	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:22	aeb
Iron, total	M200.7 ICP	0.05			mg/L	0.02	0.05	04/09/13 9:49	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:24	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:22	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 23:22	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 9:49	aeb
Magnesium, dissolved	M200.7 ICP	16.1			mg/L	0.2	1	04/03/13 23:22	aeb
Magnesium, total	M200.7 ICP	15.3			mg/L	0.2	1	04/09/13 9:49	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0060			mg/L	0.0005	0.003	04/06/13 1:24	msh
Manganese, total	M200.8 ICP-MS	0.0198			mg/L	0.0005	0.003	04/06/13 2:22	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 10:11	las
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/08/13 10:29	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0095			mg/L	0.0005	0.003	04/06/13 1:24	msh
Molybdenum, total	M200.8 ICP-MS	0.0106			mg/L	0.0005	0.003	04/06/13 2:22	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:24	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:22	pmc
Potassium, dissolved	M200.7 ICP	9.4			mg/L	0.3	2	04/03/13 23:22	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L11357-02***
Date Sampled: *03/13/13 16:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	9.0			mg/L	0.3	2	04/09/13 9:49	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:22	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:49	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0046			mg/L	0.0001	0.0003	04/06/13 1:24	msh
Selenium, total	M200.8 ICP-MS	0.0042			mg/L	0.0001	0.0003	04/06/13 2:22	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:24	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:22	pmc
Sodium, dissolved	M200.7 ICP	46.3		*	mg/L	0.3	2	04/03/13 23:22	aeb
Sodium, total	M200.7 ICP	43.1			mg/L	0.3	2	04/09/13 9:49	aeb
Strontium, dissolved	M200.7 ICP	0.16			mg/L	0.01	0.05	04/03/13 23:22	aeb
Strontium, total	M200.7 ICP	0.15			mg/L	0.01	0.05	04/09/13 9:49	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:24	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:22	pmc
Tin, dissolved	M200.8 ICP-MS	0.0003	B	*	mg/L	0.0001	0.0005	04/06/13 1:24	msh
Tin, total	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0005	04/06/13 2:22	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:22	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 9:49	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0418			mg/L	0.0002	0.001	04/06/13 1:24	msh
Vanadium, total	M200.8 ICP-MS	0.0462			mg/L	0.0002	0.001	04/06/13 2:22	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:22	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/09/13 9:49	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	137			mg/L	1	7	04/11/13 13:03	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 15:56	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	04/09/13 19:01	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH DUPLICATE

ACZ Sample ID: ***L11357-03***
Date Sampled: *03/13/13 16:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 16:09	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 15:19	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:12	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH DUPLICATE

ACZ Sample ID: ***L11357-03***
Date Sampled: *03/13/13 16:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.03	B		mg/L	0.03	0.2	04/03/13 23:26	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 9:52	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:27	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:25	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0413			mg/L	0.0002	0.001	04/06/13 1:27	msh
Arsenic, total	M200.8 ICP-MS	0.0436			mg/L	0.0002	0.001	04/06/13 2:25	pmc
Barium, dissolved	M200.7 ICP	0.008	B		mg/L	0.003	0.02	04/03/13 23:26	aeb
Barium, total	M200.7 ICP	0.007	B		mg/L	0.003	0.02	04/09/13 9:52	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:27	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:25	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:26	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 9:52	aeb
Boron, dissolved	M200.8 ICP-MS	0.097		*	mg/L	0.005	0.01	04/09/13 13:58	msh
Boron, total	M200.8 ICP-MS	0.10		*	mg/L	0.03	0.05	04/08/13 23:56	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:27	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:25	pmc
Calcium, dissolved	M200.7 ICP	27.9			mg/L	0.2	1	04/03/13 23:26	aeb
Calcium, total	M200.7 ICP	26.1			mg/L	0.2	1	04/09/13 9:52	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0005	0.002	04/06/13 1:27	msh
Chromium, total	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	04/06/13 2:25	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00011	B		mg/L	0.00005	0.0003	04/06/13 1:27	msh
Cobalt, total	M200.8 ICP-MS	0.00007	B		mg/L	0.00005	0.0003	04/06/13 2:25	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:27	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:25	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 3:08	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:52	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:26	aeb
Iron, total	M200.7 ICP	0.04	B		mg/L	0.02	0.05	04/09/13 9:52	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:27	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:25	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 23:26	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 9:52	aeb
Magnesium, dissolved	M200.7 ICP	15.9			mg/L	0.2	1	04/03/13 23:26	aeb
Magnesium, total	M200.7 ICP	15.1			mg/L	0.2	1	04/09/13 9:52	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0057			mg/L	0.0005	0.003	04/06/13 1:27	msh
Manganese, total	M200.8 ICP-MS	0.0136			mg/L	0.0005	0.003	04/06/13 2:25	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 10:18	las
Mercury, total	M1631, Atomic Fluorescence		U	*	ng/L	1	3	04/08/13 10:35	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0088			mg/L	0.0005	0.003	04/06/13 1:27	msh
Molybdenum, total	M200.8 ICP-MS	0.0107			mg/L	0.0005	0.003	04/06/13 2:25	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:27	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:25	pmc
Potassium, dissolved	M200.7 ICP	9.6			mg/L	0.3	2	04/03/13 23:26	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TWIN SPRINGS SOUTH DUPLICATE

ACZ Sample ID: ***L11357-03***
Date Sampled: *03/13/13 16:40*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	8.9			mg/L	0.3	2	04/09/13 9:52	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:26	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:52	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0047			mg/L	0.0001	0.0003	04/06/13 1:27	msh
Selenium, total	M200.8 ICP-MS	0.0042			mg/L	0.0001	0.0003	04/06/13 2:25	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:27	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:25	pmc
Sodium, dissolved	M200.7 ICP	46.7		*	mg/L	0.3	2	04/03/13 23:26	aeb
Sodium, total	M200.7 ICP	42.5			mg/L	0.3	2	04/09/13 9:52	aeb
Strontium, dissolved	M200.7 ICP	0.16			mg/L	0.01	0.05	04/03/13 23:26	aeb
Strontium, total	M200.7 ICP	0.15			mg/L	0.01	0.05	04/09/13 9:52	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:27	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:25	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:27	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 2:25	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:26	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 9:52	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0400			mg/L	0.0002	0.001	04/06/13 1:27	msh
Vanadium, total	M200.8 ICP-MS	0.0459			mg/L	0.0002	0.001	04/06/13 2:25	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:26	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/09/13 9:52	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	135			mg/L	1	7	04/11/13 13:03	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:00	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	04/09/13 19:02	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L11357-04***
Date Sampled: *03/17/13 14:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 16:22	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 15:31	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:24	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L11357-04***
Date Sampled: *03/17/13 14:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:29	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 9:55	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:30	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:28	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0257			mg/L	0.0002	0.001	04/06/13 1:30	msh
Arsenic, total	M200.8 ICP-MS	0.0265			mg/L	0.0002	0.001	04/06/13 2:28	pmc
Barium, dissolved	M200.7 ICP	0.051			mg/L	0.003	0.02	04/03/13 23:29	aeb
Barium, total	M200.7 ICP	0.051			mg/L	0.003	0.02	04/09/13 9:55	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:30	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:28	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:29	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 9:55	aeb
Boron, dissolved	M200.8 ICP-MS	0.060		*	mg/L	0.005	0.01	04/09/13 14:02	msh
Boron, total	M200.8 ICP-MS	0.06		*	mg/L	0.01	0.02	04/08/13 23:58	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:30	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:28	pmc
Calcium, dissolved	M200.7 ICP	55.4			mg/L	0.2	1	04/03/13 23:29	aeb
Calcium, total	M200.7 ICP	51.8			mg/L	0.2	1	04/09/13 9:55	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:30	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 2:28	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00018	B		mg/L	0.00005	0.0003	04/06/13 1:30	msh
Cobalt, total	M200.8 ICP-MS	0.00007	B		mg/L	0.00005	0.0003	04/06/13 2:28	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:30	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:28	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 3:12	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:55	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:29	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/09/13 9:55	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:30	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:28	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/03/13 23:29	aeb
Lithium, total	M200.7 ICP	0.04	B		mg/L	0.02	0.1	04/09/13 9:55	aeb
Magnesium, dissolved	M200.7 ICP	12.4			mg/L	0.2	1	04/03/13 23:29	aeb
Magnesium, total	M200.7 ICP	11.8			mg/L	0.2	1	04/09/13 9:55	aeb
Manganese, dissolved	M200.8 ICP-MS	0.0015	B		mg/L	0.0005	0.003	04/06/13 1:30	msh
Manganese, total	M200.8 ICP-MS	0.0021	B		mg/L	0.0005	0.003	04/06/13 2:28	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	0.4	B	*	ng/L	0.4	1	04/10/13 10:25	las
Mercury, total	M1631, Atomic Fluorescence	0.3	B		ng/L	0.2	0.5	04/08/13 11:09	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0031			mg/L	0.0005	0.003	04/06/13 1:30	msh
Molybdenum, total	M200.8 ICP-MS	0.0037			mg/L	0.0005	0.003	04/06/13 2:28	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:30	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:28	pmc
Potassium, dissolved	M200.7 ICP	5.1			mg/L	0.3	2	04/03/13 23:29	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L11357-04***
Date Sampled: *03/17/13 14:30*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	4.5			mg/L	0.3	2	04/09/13 9:55	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:29	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:55	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0059			mg/L	0.0001	0.0003	04/06/13 1:30	msh
Selenium, total	M200.8 ICP-MS	0.0058			mg/L	0.0001	0.0003	04/06/13 2:28	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:30	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:28	pmc
Sodium, dissolved	M200.7 ICP	38.1		*	mg/L	0.3	2	04/03/13 23:29	aeb
Sodium, total	M200.7 ICP	34.9			mg/L	0.3	2	04/09/13 9:55	aeb
Strontium, dissolved	M200.7 ICP	0.25			mg/L	0.01	0.05	04/03/13 23:29	aeb
Strontium, total	M200.7 ICP	0.24			mg/L	0.01	0.05	04/09/13 9:55	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:30	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:28	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:30	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 2:28	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:29	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 9:55	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0302			mg/L	0.0002	0.001	04/06/13 1:30	msh
Vanadium, total	M200.8 ICP-MS	0.0338			mg/L	0.0002	0.001	04/06/13 2:28	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:29	aeb
Zinc, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	04/09/13 9:55	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	189			mg/L	1	7	04/11/13 13:04	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:02	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B		mg/L	0.01	0.05	04/09/13 19:03	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SAGEBRUSH SPRINGS

ACZ Sample ID: ***L11357-05***
Date Sampled: *03/13/13 09:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 16:34	lhb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:36	scp
Total Hot Plate Digestion	M200.2 ICP							04/08/13 15:42	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SAGEBRUSH SPRINGS

ACZ Sample ID: ***L11357-05***
Date Sampled: *03/13/13 09:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	04/03/13 23:33	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 9:58	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:34	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:31	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0070			mg/L	0.0002	0.001	04/06/13 1:34	msh
Arsenic, total	M200.8 ICP-MS	0.0069			mg/L	0.0002	0.001	04/06/13 2:31	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	04/03/13 23:33	aeb
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	04/09/13 9:58	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:34	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:31	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:33	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 9:58	aeb
Boron, dissolved	M200.8 ICP-MS	0.045		*	mg/L	0.005	0.01	04/09/13 14:05	msh
Boron, total	M200.8 ICP-MS	0.05		*	mg/L	0.01	0.02	04/09/13 0:01	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:31	pmc
Calcium, dissolved	M200.7 ICP	48.9			mg/L	0.2	1	04/03/13 23:33	aeb
Calcium, total	M200.7 ICP	45.4			mg/L	0.2	1	04/09/13 9:58	aeb
Chromium, dissolved	M200.8 ICP-MS	0.0011	B		mg/L	0.0005	0.002	04/06/13 1:34	msh
Chromium, total	M200.8 ICP-MS	0.0012	B		mg/L	0.0005	0.002	04/06/13 2:31	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00020	B		mg/L	0.00005	0.0003	04/06/13 1:34	msh
Cobalt, total	M200.8 ICP-MS	0.00006	B		mg/L	0.00005	0.0003	04/06/13 2:31	pmc
Copper, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:34	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:31	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 3:15	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:58	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:33	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/09/13 9:58	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:31	pmc
Lithium, dissolved	M200.7 ICP	0.02	B		mg/L	0.02	0.1	04/03/13 23:33	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 9:58	aeb
Magnesium, dissolved	M200.7 ICP	10.8			mg/L	0.2	1	04/03/13 23:33	aeb
Magnesium, total	M200.7 ICP	10.2			mg/L	0.2	1	04/09/13 9:58	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:34	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:31	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U	*	ng/L	0.4	1	04/10/13 10:32	las
Mercury, total	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/08/13 11:16	las
Molybdenum, dissolved	M200.8 ICP-MS	0.0016	B		mg/L	0.0005	0.003	04/06/13 1:34	msh
Molybdenum, total	M200.8 ICP-MS	0.0018	B		mg/L	0.0005	0.003	04/06/13 2:31	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:34	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:31	pmc
Potassium, dissolved	M200.7 ICP	5.4			mg/L	0.3	2	04/03/13 23:33	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: SAGEBRUSH SPRINGS

ACZ Sample ID: ***L11357-05***
Date Sampled: *03/13/13 09:50*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	4.8			mg/L	0.3	2	04/09/13 9:58	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/03/13 23:33	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 9:58	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0011			mg/L	0.0001	0.0003	04/06/13 1:34	msh
Selenium, total	M200.8 ICP-MS	0.0011			mg/L	0.0001	0.0003	04/06/13 2:31	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:34	msh
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:31	pmc
Sodium, dissolved	M200.7 ICP	22.5		*	mg/L	0.3	2	04/03/13 23:33	aeb
Sodium, total	M200.7 ICP	20.0			mg/L	0.3	2	04/09/13 9:58	aeb
Strontium, dissolved	M200.7 ICP	0.21			mg/L	0.01	0.05	04/03/13 23:33	aeb
Strontium, total	M200.7 ICP	0.20			mg/L	0.01	0.05	04/09/13 9:58	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:34	msh
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:31	pmc
Tin, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 1:34	msh
Tin, total	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0005	04/06/13 2:31	pmc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	04/03/13 23:33	aeb
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 9:58	aeb
Vanadium, dissolved	M200.8 ICP-MS	0.0180			mg/L	0.0002	0.001	04/06/13 1:34	msh
Vanadium, total	M200.8 ICP-MS	0.0191			mg/L	0.0002	0.001	04/06/13 2:31	pmc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	04/03/13 23:33	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/09/13 9:58	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation	167			mg/L	1	7	04/11/13 13:04	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:03	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01	B		mg/L	0.01	0.05	04/09/13 19:04	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L11357-06***
Date Sampled: *03/13/13 14:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 16:47	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 15:54	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 13:48	scp

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L11357-06***
Date Sampled: *03/13/13 14:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.04	B		mg/L	0.03	0.2	04/03/13 23:36	aeb
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 10:01	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 1:37	msh
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:41	pmc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/06/13 1:37	msh
Arsenic, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0002	0.001	04/06/13 2:41	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	04/03/13 23:36	aeb
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	04/09/13 10:01	aeb
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 1:37	msh
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/09/13 0:09	pmc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	04/03/13 23:36	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 10:01	aeb
Boron, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0005	0.001	04/08/13 18:45	msh
Boron, total	M200.8 ICP-MS		U	*	mg/L	0.0005	0.001	04/09/13 0:09	pmc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:37	msh
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:41	pmc
Calcium, dissolved	M200.7 ICP		U		mg/L	0.2	1	04/03/13 23:36	aeb
Calcium, total	M200.7 ICP		U		mg/L	0.2	1	04/09/13 10:01	aeb
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 1:37	msh
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 2:41	pmc
Cobalt, dissolved	M200.8 ICP-MS	0.00014	B		mg/L	0.00005	0.0003	04/06/13 1:37	msh
Cobalt, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:41	pmc
Copper, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.003	04/06/13 1:37	msh
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:41	pmc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	04/06/13 3:18	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 10:01	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	04/03/13 23:36	aeb
Iron, total	M200.7 ICP	0.09			mg/L	0.02	0.05	04/09/13 10:01	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 1:37	msh
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:41	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	04/03/13 23:36	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 10:01	aeb
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	04/03/13 23:36	aeb
Magnesium, total	M200.7 ICP		U		mg/L	0.2	1	04/09/13 10:01	aeb
Manganese, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:37	msh
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:41	pmc
Mercury, dissolved	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/09/13 15:35	las
Mercury, total	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/05/13 12:03	las
Molybdenum, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 1:37	msh
Molybdenum, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:41	pmc
Nickel, dissolved	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 1:37	msh
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:41	pmc
Potassium, dissolved	M200.7 ICP	0.7	B		mg/L	0.3	2	04/03/13 23:36	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L11357-06***
Date Sampled: *03/13/13 14:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	U		mg/L	0.3	2	04/09/13 10:01	aeb
Scandium, dissolved	M200.7 ICP	U	*	mg/L	0.1	0.5	04/03/13 23:36	aeb
Scandium, total	M200.7 ICP	U	*	mg/L	0.1	0.5	04/09/13 10:01	aeb
Selenium, dissolved	M200.8 ICP-MS	U		mg/L	0.0001	0.0003	04/06/13 1:37	msh
Selenium, total	M200.8 ICP-MS	U		mg/L	0.0001	0.0003	04/06/13 2:41	pmc
Silver, dissolved	M200.8 ICP-MS	U		mg/L	0.00005	0.0003	04/06/13 1:37	msh
Silver, total	M200.8 ICP-MS	U		mg/L	0.00005	0.0003	04/06/13 2:41	pmc
Sodium, dissolved	M200.7 ICP	U		mg/L	0.3	2	04/06/13 3:18	aeb
Sodium, total	M200.7 ICP	U		mg/L	0.3	2	04/09/13 10:01	aeb
Strontium, dissolved	M200.7 ICP	U		mg/L	0.01	0.05	04/03/13 23:36	aeb
Strontium, total	M200.7 ICP	U		mg/L	0.01	0.05	04/09/13 10:01	aeb
Thallium, dissolved	M200.8 ICP-MS	U		mg/L	0.0001	0.0005	04/06/13 1:37	msh
Thallium, total	M200.8 ICP-MS	U		mg/L	0.0001	0.0005	04/06/13 2:41	pmc
Tin, dissolved	M200.8 ICP-MS	U	*	mg/L	0.0001	0.0005	04/06/13 1:37	msh
Tin, total	M200.8 ICP-MS	U	*	mg/L	0.0001	0.0005	04/06/13 2:41	pmc
Titanium, dissolved	M200.7 ICP	U		mg/L	0.005	0.03	04/03/13 23:36	aeb
Titanium, total	M200.7 ICP	U		mg/L	0.005	0.03	04/09/13 10:01	aeb
Vanadium, dissolved	M200.8 ICP-MS	U		mg/L	0.0002	0.001	04/06/13 1:37	msh
Vanadium, total	M200.8 ICP-MS	U		mg/L	0.0002	0.001	04/06/13 2:41	pmc
Zinc, dissolved	M200.7 ICP	U		mg/L	0.01	0.05	04/03/13 23:36	aeb
Zinc, total	M200.7 ICP	U		mg/L	0.01	0.05	04/09/13 10:01	aeb

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Hardness as CaCO3	SM2340B - Calculation		U		mg/L	1	7	04/11/13 13:04	calc
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:04	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U		mg/L	0.01	0.05	04/09/13 19:06	pjb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L11357-07***
Date Sampled: *03/13/13 14:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/09/13 17:00	lhb
Total Hot Plate Digestion	M200.2 ICP							04/08/13 16:06	aeb
Total Hot Plate Digestion	M200.2 ICP-MS							04/04/13 14:24	scp

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP		U		mg/L	0.03	0.2	04/09/13 10:11	aeb
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	04/06/13 2:50	pmc
Arsenic, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0002	0.001	04/06/13 2:50	pmc
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	04/09/13 10:11	aeb
Beryllium, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/09/13 0:17	pmc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	04/09/13 10:11	aeb
Boron, total	M200.8 ICP-MS	0.0016		*	mg/L	0.0005	0.001	04/09/13 0:17	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:50	pmc
Calcium, total	M200.7 ICP		U		mg/L	0.2	1	04/09/13 10:11	aeb
Chromium, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	04/06/13 2:50	pmc
Cobalt, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:50	pmc
Copper, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:50	pmc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 10:11	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	04/09/13 10:11	aeb
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:50	pmc
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	04/09/13 10:11	aeb
Magnesium, total	M200.7 ICP		U		mg/L	0.2	1	04/09/13 10:11	aeb
Manganese, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:50	pmc
Mercury, total	M1631, Atomic Fluorescence		U		ng/L	0.2	0.5	04/05/13 12:10	las
Molybdenum, total	M200.8 ICP-MS		U		mg/L	0.0005	0.003	04/06/13 2:50	pmc
Nickel, total	M200.8 ICP-MS		U		mg/L	0.0006	0.003	04/06/13 2:50	pmc
Potassium, total	M200.7 ICP		U		mg/L	0.3	2	04/09/13 10:11	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	04/09/13 10:11	aeb
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	04/06/13 2:50	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	04/06/13 2:50	pmc
Sodium, total	M200.7 ICP		U		mg/L	0.3	2	04/09/13 10:11	aeb
Strontium, total	M200.7 ICP		U		mg/L	0.01	0.05	04/09/13 10:11	aeb
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	04/06/13 2:50	pmc
Tin, total	M200.8 ICP-MS	0.0006		*	mg/L	0.0001	0.0005	04/06/13 2:50	pmc
Titanium, total	M200.7 ICP		U		mg/L	0.005	0.03	04/09/13 10:11	aeb
Vanadium, total	M200.8 ICP-MS		U		mg/L	0.0002	0.001	04/06/13 2:50	pmc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	04/09/13 10:11	aeb

SPF Water Engineering
Project ID: Calico Winter Sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L11357-07***
Date Sampled: *03/13/13 14:35*
Date Received: *04/01/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/08/13 16:05	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U		mg/L	0.01	0.05	04/09/13 19:07	pjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L11357***

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.978	mg/L	98.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.09	0.09			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.105	mg/L	110.5	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.054	mg/L	105.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.031	mg/L	103.1	85	115	2.21	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		2.057	mg/L	102.9	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.09	0.09			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.066	0.066			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		1	mg/L	100	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	.04	1.031	mg/L	99.1	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	.04	1.041	mg/L	100.1	70	130	0.97	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.02		.02133	mg/L	106.7	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0012	0.0012			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.01		.00967	mg/L	96.7	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.01	U	.00932	mg/L	93.2	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.01	U	.00995	mg/L	99.5	70	130	6.54	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02		.01982	mg/L	99.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0012	0.0012			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00088	0.00088			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01		.01063	mg/L	106.3	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.01	U	.01054	mg/L	105.4	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.01	U	.01052	mg/L	105.2	70	130	0.19	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05352	mg/L	107	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0006	0.0006			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04917	mg/L	98.2	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	.0607	.1204	mg/L	119.3	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	.0607	.1093	mg/L	97.1	70	130	9.66	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05112	mg/L	102.2	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05261	mg/L	105.1	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	.0003	.05203	mg/L	103.4	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	.0003	.05181	mg/L	102.9	70	130	0.42	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.9599	mg/L	98	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0065	mg/L		-0.009	0.009			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.5033	mg/L	100.7	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.069	.5816	mg/L	102.5	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.069	.5811	mg/L	102.4	85	115	0.09	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.9695	mg/L	98.5	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.009	0.009			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.0066	0.0066			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	.5		.4647	mg/L	92.9	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	.5	.012	.4764	mg/L	92.9	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	.5	.012	.4851	mg/L	94.6	70	130	1.81	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.04478	mg/L	89.6	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.00015	0.00015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.0501		.04435	mg/L	88.5	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.0501	U	.04733	mg/L	94.5	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.0501	U	.04915	mg/L	98.1	70	130	3.77	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04815	mg/L	96.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.05027	mg/L	100.3	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.0501	U	.04838	mg/L	96.6	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.0501	U	.0473	mg/L	94.4	70	130	2.26	20	
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.05		.04626	mg/L	92.5	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.0501		.04686	mg/L	93.5	85	115			
L11357-06LFM	LFM	04/09/13 0:12	MS130329-1	.0501	U	.04887	mg/L	97.5	70	130			
L11357-06LFMD	LFMD	04/09/13 0:14	MS130329-1	.0501	U	.04801	mg/L	95.8	70	130	1.78	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.008	mg/L	100.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.12	0.12			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.064	mg/L	106.4	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.062	mg/L	106.2	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.079	mg/L	107.9	85	115	1.59	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		2.061	mg/L	103.1	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.12	0.12			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.088	0.088			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		1.009	mg/L	100.9	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	U	1.016	mg/L	101.6	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	U	.979	mg/L	97.9	70	130	3.71	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Boron, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341712													
WG341712ICV	ICV	04/08/13 17:01	MS130402-2	.02		.02015	mg/L	100.8	90	110			
WG341712ICB	ICB	04/08/13 17:04				U	mg/L		-0.0015	0.0015			
WG341712LFB1	LFB	04/08/13 17:08	MS130329-1	.01001		.00986	mg/L	98.5	85	115			
WG341712LFB2	LFB	04/08/13 18:42	MS130329-1	.01001		.01002	mg/L	100.1	85	115			
L11357-06AS	AS	04/08/13 18:48	MS130329-1	.01001	U	.00912	mg/L	91.1	70	130			
L11357-06ASD	ASD	04/08/13 18:51	MS130329-1	.01001	U	.01	mg/L	99.9	70	130	9.21	20	
WG341765													
WG341765ICV	ICV	04/09/13 13:13	MS130402-2	.02		.01993	mg/L	99.7	90	110			
WG341765ICB	ICB	04/09/13 13:16				U	mg/L		-0.0015	0.0015			
WG341765LFB	LFB	04/09/13 13:19	MS130329-1	.01001		.00888	mg/L	88.7	85	115			
L11356-01AS	AS	04/09/13 13:26	MS130329-1	.1001	.063	.1499	mg/L	86.8	70	130			
L11356-01ASD	ASD	04/09/13 13:29	MS130329-1	.1001	.063	.1566	mg/L	93.5	70	130	4.37	20	

Boron, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341737													
WG341737ICV	ICV	04/08/13 23:02	MS130402-2	.02		.01946	mg/L	97.3	90	110			
WG341737ICB	ICB	04/08/13 23:05				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/08/13 23:08				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/08/13 23:10	MS130329-1	.01001		.00947	mg/L	94.6	85	115			
L11357-06LFM	LFM	04/09/13 0:12	MS130329-1	.01001	U	.00991	mg/L	99	70	130			
L11357-06LFMD	LFMD	04/09/13 0:14	MS130329-1	.01001	U	.01004	mg/L	100.3	70	130	1.3	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05203	mg/L	104.1	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0003	0.0003			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.0501		.04873	mg/L	97.3	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.0501	U	.04672	mg/L	93.3	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.0501	U	.04905	mg/L	97.9	70	130	4.87	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05046	mg/L	100.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.051	mg/L	101.8	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.0501	U	.05019	mg/L	100.2	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.0501	U	.04981	mg/L	99.4	70	130	0.76	20	

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ACZ Project ID: ***L11357***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.36	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.26	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	67.95918		73.62	mg/L	108.3	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	67.95918	36.5	114.83	mg/L	115.3	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	67.95918	36.5	113.75	mg/L	113.7	85	115	0.94	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	100		97.78	mg/L	97.8	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.6	0.6			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.44	0.44			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	67.95918		66.66	mg/L	98.1	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	67.95918	25.5	91.58	mg/L	97.2	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	67.95918	25.5	91.95	mg/L	97.8	70	130	0.4	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05071	mg/L	101.4	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0015	0.0015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04754	mg/L	95	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.04892	mg/L	97.7	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.04465	mg/L	89.2	70	130	9.13	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04901	mg/L	98	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05044	mg/L	100.8	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.04954	mg/L	99	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04948	mg/L	98.9	70	130	0.12	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05108	mg/L	102.2	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.00015	0.00015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04991	mg/L	99.7	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	.00013	.04566	mg/L	91	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	.00013	.04842	mg/L	96.5	70	130	5.87	20	

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ACZ Project ID: ***L11357***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04878	mg/L	97.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04948	mg/L	98.9	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.04963	mg/L	99.2	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04972	mg/L	99.3	70	130	0.18	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05025	mg/L	100.5	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0015	0.0015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04684	mg/L	93.6	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.04681	mg/L	93.5	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.04253	mg/L	85	70	130	9.58	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05037	mg/L	100.7	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05083	mg/L	101.6	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.05031	mg/L	100.5	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.05075	mg/L	101.4	70	130	0.87	20	

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341537													
WG341537ICV	ICV	04/06/13 1:35	II130114-3	2		2.01	mg/L	100.5	95	105			
WG341537ICB	ICB	04/06/13 1:41				U	mg/L		-0.3	0.3			
WG341537LFB	LFB	04/06/13 1:54	II130326-2	1		.94	mg/L	94	85	115			
L11355-02AS	AS	04/06/13 2:44	II130326-2	1	U	1.01	mg/L	101	85	115			
L11355-02ASD	ASD	04/06/13 2:47	II130326-2	1	U	1	mg/L	100	85	115	1	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		2.01	mg/L	100.5	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.3	0.3			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.22	0.22			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		1.03	mg/L	103	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	U	.97	mg/L	97	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	U	1.02	mg/L	102	70	130	5.03	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.061	mg/L	103.1	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.137	mg/L	113.7	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.104	mg/L	110.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.081	mg/L	108.1	85	115	2.11	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.974	mg/L	98.7	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.06	0.06			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.044	0.044			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		.947	mg/L	94.7	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	.04	.969	mg/L	92.9	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	.04	.969	mg/L	92.9	70	130	0	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.04976	mg/L	99.5	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0003	0.0003			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04709	mg/L	94.1	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.0444	mg/L	88.7	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.04725	mg/L	94.4	70	130	6.22	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05165	mg/L	103.3	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.0515	mg/L	102.9	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.05124	mg/L	102.4	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.05036	mg/L	100.6	70	130	1.73	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.998	mg/L	99.9	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.06	0.06			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.014	mg/L	101.4	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.027	mg/L	102.7	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.035	mg/L	103.5	85	115	0.78	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		2.004	mg/L	100.2	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.06	0.06			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.044	0.044			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		.977	mg/L	97.7	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	U	.994	mg/L	99.4	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	U	1.012	mg/L	101.2	70	130	1.79	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		103.39	mg/L	103.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.2	mg/L		-0.6	0.6			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	49.99941		53.64	mg/L	107.3	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	49.99941	10	67.69	mg/L	115.4	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	49.99941	10	67.1	mg/L	114.2	85	115	0.88	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	100		100.9	mg/L	100.9	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.6	0.6			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.44	0.44			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	49.99941		49.51	mg/L	99	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	49.99941	15.4	64.76	mg/L	98.7	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	49.99941	15.4	65.17	mg/L	99.5	70	130	0.63	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05186	mg/L	103.7	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0015	0.0015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.05017	mg/L	100.2	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	.0033	.04872	mg/L	90.7	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	.0033	.05245	mg/L	98.2	70	130	7.37	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04949	mg/L	99	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05001	mg/L	99.9	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.05041	mg/L	100.7	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04993	mg/L	99.8	70	130	0.96	20	

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ACZ Project ID: ***L11357***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341683													
WG341683CCV1	CCV	04/09/13 10:35	HG130219-7	5		4.08	ng/L	81.6	76.5	123.4			
WG341683CCB1	CCB	04/09/13 10:42				U	ng/L		-0.5	0.5			
WG341683LFB	LFB	04/09/13 10:49	HG130219-8	2		1.68	ng/L	84	71	125			
WG341683CCV2	CCV	04/09/13 15:14	HG130219-7	5		4.4	ng/L	88	76.5	123.4			
WG341683CCB2	CCB	04/09/13 15:21				U	ng/L		-0.5	0.5			
WG341683CCV3	CCV	04/09/13 16:19	HG130219-7	5		4.15	ng/L	83	76.5	123.4			
WG341683CCB3	CCB	04/09/13 16:26				U	ng/L		-0.5	0.5			
WG341683CCV4	CCV	04/09/13 17:07	HG130219-7	5		3.87	ng/L	77.4	76.5	123.4			
WG341683CCB4	CCB	04/09/13 17:13				U	ng/L		-0.5	0.5			
WG341683CCV6	CCV	04/10/13 9:37	HG130219-7	5		4.17	ng/L	83.4	76.5	123.4			
WG341683CCB6	CCB	04/10/13 9:44				U	ng/L		-0.5	0.5			
L11357-01MS	MS	04/10/13 9:58	HG2XPREP	8	U	3.33	ng/L	83.3	71	125			
L11357-01MSD	MSD	04/10/13 10:05	HG2XPREP	8	U	3.2	ng/L	80	71	125	3.98	24	
WG341683CCV7	CCV	04/10/13 10:39	HG130219-7	5		3.85	ng/L	77	76.5	123.4			
WG341683CCB7	CCB	04/10/13 10:45				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG339518													
WG339518ICV	ICV	02/25/13 14:43	HG130219-7	5		4.97	ng/L	99.4	79	121			
WG339518ICB	ICB	02/25/13 14:50				U	ng/L		-0.5	0.5			
WG341603													
WG341603CCV1	CCV	04/05/13 11:20	HG130219-7	5		3.93	ng/L	78.6	76.5	123.4			
WG341603CCB1	CCB	04/05/13 11:27				U	ng/L		-0.5	0.5			
WG341603LFB	LFB	04/05/13 11:33	HG130219-8	2		1.49	ng/L	74.5	71	125			
WG341603CCV2	CCV	04/05/13 12:24	HG130219-7	5		4.19	ng/L	83.8	76.5	123.4			
WG341603CCB2	CCB	04/05/13 12:30				U	ng/L		-0.5	0.5			
WG341603CCV3	CCV	04/05/13 13:27	HG130219-7	5		3.91	ng/L	78.2	76.5	123.4			
WG341603CCB3	CCB	04/05/13 13:34				U	ng/L		-0.5	0.5			
L11350-01MS	MS	04/05/13 13:48	HG10XPRE	200	6	20.6	ng/L	73	71	125			
L11350-01MSD	MSD	04/05/13 13:54	HG10XPRE	200	6	20	ng/L	70	71	125	2.96	24	MA
WG341603CCV4	CCV	04/05/13 14:01	HG130219-7	5		3.95	ng/L	79	76.5	123.4			
WG341603CCB4	CCB	04/05/13 14:08				U	ng/L		-0.5	0.5			
WG341603CCV5	CCV	04/05/13 14:49	HG130219-7	5		4.26	ng/L	85.2	76.5	123.4			
WG341603CCB5	CCB	04/05/13 14:55				U	ng/L		-0.5	0.5			
WG341603CCV6	CCV	04/08/13 10:08	HG130219-7	5		4.13	ng/L	82.6	76.5	123.4			
WG341603CCB6	CCB	04/08/13 10:15				U	ng/L		-0.5	0.5			
L11357-03MS	MS	04/08/13 10:42	HG5XPREP	50	U	8.3	ng/L	83	71	125			
L11357-03MSD	MSD	04/08/13 10:49	HG5XPREP	50	U	8.7	ng/L	87	71	125	4.71	24	
WG341603CCV7	CCV	04/08/13 10:56	HG130219-7	5		4.22	ng/L	84.4	76.5	123.4			
WG341603CCB7	CCB	04/08/13 11:03				U	ng/L		-0.5	0.5			
WG341603CCV8	CCV	04/08/13 11:30	HG130219-7	5		4.58	ng/L	91.6	76.5	123.4			
WG341603CCB8	CCB	04/08/13 11:36				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L11357***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.02004		.01924	mg/L	96	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0015	0.0015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05		.04587	mg/L	91.7	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05	.0132	.05631	mg/L	86.2	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05	.0132	.05993	mg/L	93.5	70	130	6.23	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02004		.01976	mg/L	98.6	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0015	0.0015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.0011	0.0011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05		.05092	mg/L	101.8	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05	U	.05029	mg/L	100.6	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05	U	.05029	mg/L	100.6	70	130	0	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05169	mg/L	103.4	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0018	0.0018			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.0474	mg/L	94.7	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.04702	mg/L	93.9	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.0425	mg/L	84.9	70	130	10.1	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05077	mg/L	101.5	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0018	0.0018			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00132	0.00132			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04972	mg/L	99.3	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.04912	mg/L	98.1	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04965	mg/L	99.2	70	130	1.07	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341704													
WG341704ICV	ICV	04/08/13 12:53	WI121105-5	1.003		1.006	mg/L	100.3	90	110			
WG341704ICB	ICB	04/08/13 12:56				U	mg/L		-0.15	0.15			
WG341715													
WG341715LFB1	LFB	04/08/13 15:21	WI121218-3	1		1.025	mg/L	102.5	90	110			
WG341715LFB2	LFB	04/08/13 15:53	WI121218-3	1		.947	mg/L	94.7	90	110			
L11357-01AS	AS	04/08/13 15:55	WI121218-3	1	U	1.008	mg/L	100.8	90	110			
L11357-02DUP	DUP	04/08/13 15:57			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L11357***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341806													
WG341806ICV	ICV	04/09/13 18:30	WI130404-1	.65228		.637	mg/L	97.7	90	110			
WG341806ICB	ICB	04/09/13 18:33				U	mg/L		-0.03	0.03			
WG341752LRB	LRB	04/09/13 18:34				U	mg/L		-0.03	0.03			
WG341752LFB	LFB	04/09/13 18:35	WI130403-2	.5		.491	mg/L	98.2	90	110			
L11356-04DUP	DUP	04/09/13 18:55			.13	.143	mg/L				9.5	20	
L11356-03LFM	LFM	04/09/13 21:52	WI130403-2	.5	1.67	2.201	mg/L	106.2	90	110			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	20		20.13	mg/L	100.7	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	99.97161		105.26	mg/L	105.3	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	99.97161	4.2	110.48	mg/L	106.3	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	99.97161	4.2	110.71	mg/L	106.5	85	115	0.21	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	20		19.93	mg/L	99.7	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.9	0.9			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.66	0.66			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	99.97161		97.54	mg/L	97.6	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	99.97161	9.2	107.3	mg/L	98.1	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	99.97161	9.2	108.8	mg/L	99.6	70	130	1.39	20	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.3	0.3			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1.0009		1.05	mg/L	104.9	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1.0009	U	1.06	mg/L	105.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.97	mg/L	98.5	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.3	0.3			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.22	0.22			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1.0009		1.03	mg/L	102.9	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1.0009	U	1.02	mg/L	101.9	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1.0009	U	1.04	mg/L	103.9	70	130	1.94	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05436	mg/L	108.7	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0003	0.0003			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.05036	mg/L	100.6	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	.0041	.06155	mg/L	114.8	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	.0041	.05773	mg/L	107.2	70	130	6.41	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05106	mg/L	102.1	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.04854	mg/L	97	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.04804	mg/L	96	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04752	mg/L	94.9	70	130	1.09	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.02006		.02103	mg/L	104.8	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.00015	0.00015			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.01001		.009315	mg/L	93.1	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.01001	U	.008169	mg/L	81.6	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.01001	U	.009298	mg/L	92.9	70	130	12.93	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.02006		.02046	mg/L	102	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.00015	0.00015			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00011	0.00011			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.01001		.01027	mg/L	102.6	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.01001	U	.01005	mg/L	100.4	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.01001	U	.01002	mg/L	100.1	70	130	0.3	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	100		101.35	mg/L	101.4	95	105			
WG341425ICB	ICB	04/03/13 21:46				.49	mg/L		-0.9	0.9			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	100.0416		104.33	mg/L	104.3	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	100.0416	43.4	145.52	mg/L	102.1	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	100.0416	43.4	145.6	mg/L	102.2	85	115	0.05	20	
WG341537													
WG341537ICV	ICV	04/06/13 1:35	II130114-3	100		100.21	mg/L	100.2	95	105			
WG341537ICB	ICB	04/06/13 1:41				U	mg/L		-0.9	0.9			
WG341537LFB	LFB	04/06/13 1:54	II130326-2	100.0416		102.1	mg/L	102.1	85	115			
L11355-02AS	AS	04/06/13 2:44	II130326-2	100.0416	39	141.3	mg/L	102.3	85	115			
L11355-02ASD	ASD	04/06/13 2:47	II130326-2	100.0416	39	141.9	mg/L	102.9	85	115	0.42	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	100		99.97	mg/L	100	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.9	0.9			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.66	0.66			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	100.0416		96.04	mg/L	96	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	100.0416	45.6	142.4	mg/L	96.8	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	100.0416	45.6	144.2	mg/L	98.6	70	130	1.26	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.971	mg/L	98.6	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.51	mg/L	102	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.25	.76	mg/L	102	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.25	.758	mg/L	101.6	85	115	0.26	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.96	mg/L	98	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.03	0.03			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.022	0.022			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	.5		.469	mg/L	93.8	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	.5	.14	.608	mg/L	93.6	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	.5	.14	.616	mg/L	95.2	70	130	1.31	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.05089	mg/L	101.8	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0003	0.0003			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04784	mg/L	95.6	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.04569	mg/L	91.3	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.04836	mg/L	96.6	70	130	5.68	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.05294	mg/L	105.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05149	mg/L	102.9	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.05136	mg/L	102.6	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.05081	mg/L	101.5	70	130	1.08	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05005		.04857	mg/L	97	90	110			
WG341638ICB	ICB	04/06/13 1:07				.00011	mg/L		-0.0003	0.0003			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.05005		.04603	mg/L	92	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.05005	U	.04207	mg/L	84.1	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.05005	U	.04478	mg/L	89.5	70	130	6.24	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04938	mg/L	98.8	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0003	0.0003			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00022	0.00022			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.05005		.05065	mg/L	101.2	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.05005	U	.05036	mg/L	100.6	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.05005	U	.04973	mg/L	99.4	70	130	1.26	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		2.0241	mg/L	101.2	95	105			
WG341425ICB	ICB	04/03/13 21:46				.0059	mg/L		-0.015	0.015			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	1		1.0204	mg/L	102	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	1	U	1.0385	mg/L	103.9	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	1	U	1.0368	mg/L	103.7	85	115	0.16	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.94	mg/L	97	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.015	0.015			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.011	0.011			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	1		.9478	mg/L	94.8	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	1	U	.9505	mg/L	95.1	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	1	U	.9603	mg/L	96	70	130	1.03	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341638													
WG341638ICV	ICV	04/06/13 1:04	MS130402-2	.05		.04985	mg/L	99.7	90	110			
WG341638ICB	ICB	04/06/13 1:07				U	mg/L		-0.0006	0.0006			
WG341638LFB	LFB	04/06/13 1:11	MS130329-1	.0501		.04783	mg/L	95.5	85	115			
L11357-01AS	AS	04/06/13 1:17	MS130329-1	.0501	.036	.08873	mg/L	105.2	70	130			
L11357-01ASD	ASD	04/06/13 1:21	MS130329-1	.0501	.036	.08076	mg/L	89.3	70	130	9.4	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341658													
WG341658ICV	ICV	04/06/13 1:21	MS130102-2	.05		.04843	mg/L	96.9	90	110			
WG341658ICB	ICB	04/06/13 1:24				U	mg/L		-0.0006	0.0006			
WG341533LRB	LRB	04/06/13 1:27				U	mg/L		-0.00044	0.00044			
WG341533LFB	LFB	04/06/13 1:31	MS130329-1	.0501		.04989	mg/L	99.6	85	115			
L11357-06LFM	LFM	04/06/13 2:44	MS130329-1	.0501	U	.04992	mg/L	99.6	70	130			
L11357-06LFMD	LFMD	04/06/13 2:47	MS130329-1	.0501	U	.04909	mg/L	98	70	130	1.68	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341425													
WG341425ICV	ICV	04/03/13 21:42	II130114-3	2		1.999	mg/L	100	95	105			
WG341425ICB	ICB	04/03/13 21:46				U	mg/L		-0.03	0.03			
WG341425LFB	LFB	04/03/13 22:00	II130326-2	.5		.526	mg/L	105.2	85	115			
L11354-02AS	AS	04/03/13 22:55	II130326-2	.5	.08	.611	mg/L	106.2	85	115			
L11354-02ASD	ASD	04/03/13 22:58	II130326-2	.5	.08	.606	mg/L	105.2	85	115	0.82	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG341749													
WG341749ICV	ICV	04/09/13 9:15	II130114-4	2		1.989	mg/L	99.5	95	105			
WG341749ICB	ICB	04/09/13 9:21				U	mg/L		-0.03	0.03			
WG341693LRB	LRB	04/09/13 9:34				U	mg/L		-0.022	0.022			
WG341693LFB	LFB	04/09/13 9:37	II130326-2	.5		.494	mg/L	98.8	85	115			
L11357-01LFM	LFM	04/09/13 9:43	II130326-2	.5	.02	.498	mg/L	95.6	70	130			
L11357-01LFMD	LFMD	04/09/13 9:46	II130326-2	.5	.02	.5	mg/L	96	70	130	0.4	20	

SPF Water Engineering

ACZ Project ID: ***L11357***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L11357-01	WG341683	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
			M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-02	WG341683	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
			M1631, Atomic Fluorescence	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-03	WG341683	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341603	Mercury, total	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-04	WG341683	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-05	WG341683	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG341425	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-06	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L11357-07	WG341715	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Boron, dissolved	M200.8 ICP-MS
Boron, total	M200.8 ICP-MS
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L11357
Date Received: 04/01/2013 09:51
Received By: ksj
Date Printed: 4/1/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3148	4.6	13	Yes

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L11357

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW
PO#: Calico Winter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SPF-2013-GW		** SPF-2013-GW w/ Rav only.					
Twin Springs North	3/13/13 14:40		5	X							
Twin Springs South	3/13/13 16:35		5	X							
Twin Springs South Duplicate	3/13/13 16:40		5	X							
Grassy Spring Stock Tank	3/17/13 14:30		5	X							
Sagebrush Springs	3/13/13 9:50		5	X							
Equipment Blank	3/13/13 14:35		5	X							
Transfer Blank	3/13/13 14:35		3			X					

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

** same as above, but exclude all filtered analyses
Green dot and HG-1631 bottles are empty.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/28/13 16:00		4:1:13 9:51

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L11357 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 01, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350300 E. Mallard Driv
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Qtr
ACZ Project ID: L12799

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 19, 2013. This project has been assigned to ACZ's project number, L12799. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12799. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after July 31, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 01, 2013

Project ID: Calico 2nd Qtr
ACZ Project ID: L12799

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 6 ground water samples from SPF Water Engineering on June 19, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L12799. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: PW-4

ACZ Sample ID: ***L12799-01***
Date Sampled: *06/17/13 11:20*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	47.7		*	mg/L	0.5	2.5	06/27/13 22:42	tcd
Fluoride	M300.0 - Ion Chromatography	1	2.25		*	mg/L	0.1	0.5	06/27/13 22:42	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/01/13 16:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/19/13 22:04	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:04	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	590		*	mg/L	10	20	06/22/13 10:07	dcw
Sulfate	M300.0 - Ion Chromatography	5	155		*	mg/L	2.5	12.5	06/28/13 13:57	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: GW-4

ACZ Sample ID: ***L12799-02***
Date Sampled: *06/17/13 12:35*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	28.7		*	mg/L	0.5	2.5	06/27/13 22:59	tcd
Fluoride	M300.0 - Ion Chromatography	1	2.30		*	mg/L	0.1	0.5	06/27/13 22:59	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/01/13 16:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/19/13 22:05	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:05	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	380		*	mg/L	10	20	06/22/13 10:08	dcw
Sulfate	M300.0 - Ion Chromatography	1	93.9		*	mg/L	0.5	2.5	06/27/13 22:59	tcd

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: 59766

ACZ Sample ID: ***L12799-03***
Date Sampled: *06/17/13 14:25*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	12.8		*	mg/L	0.5	2.5	06/27/13 23:17	tcd
Fluoride	M300.0 - Ion Chromatography	1	1.79		*	mg/L	0.1	0.5	06/27/13 23:17	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.05	BH		mg/L	0.02	0.1	07/01/13 16:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.05	BH	*	mg/L	0.02	0.1	06/19/13 22:06	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:06	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	650		*	mg/L	10	20	06/22/13 10:10	dcw
Sulfate	M300.0 - Ion Chromatography	5	311		*	mg/L	2.5	12.5	06/28/13 14:15	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: GW-1

ACZ Sample ID: ***L12799-04***
Date Sampled: *06/17/13 15:40*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	12.5		*	mg/L	0.5	2.5	06/27/13 23:34	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.49	B	*	mg/L	0.1	0.5	06/27/13 23:34	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.17	H		mg/L	0.02	0.1	07/01/13 16:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.17	H	*	mg/L	0.02	0.1	06/19/13 22:10	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:10	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290		*	mg/L	10	20	06/22/13 10:11	dcw
Sulfate	M300.0 - Ion Chromatography	1	35.1		*	mg/L	0.5	2.5	06/27/13 23:34	tcd

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: GW-1-D

ACZ Sample ID: ***L12799-05***
Date Sampled: *06/17/13 15:45*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	12.5		*	mg/L	0.5	2.5	06/28/13 0:09	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.53		*	mg/L	0.1	0.5	06/28/13 0:09	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.17	H		mg/L	0.02	0.1	07/01/13 16:18	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.17	H	*	mg/L	0.02	0.1	06/19/13 22:11	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:11	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280		*	mg/L	10	20	06/22/13 10:13	dcw
Sulfate	M300.0 - Ion Chromatography	1	37.5		*	mg/L	0.5	2.5	06/28/13 0:09	tcd

SPF Water Engineering
Project ID: Calico 2nd Qtr
Sample ID: PW-1

ACZ Sample ID: ***L12799-06***
Date Sampled: *06/17/13 18:15*
Date Received: *06/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.83		*	mg/L	0.5	2.5	06/28/13 0:27	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.47	B	*	mg/L	0.1	0.5	06/28/13 0:27	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.62	H		mg/L	0.02	0.1	07/01/13 16:18	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.62	H	*	mg/L	0.02	0.1	06/19/13 22:12	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/19/13 22:12	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270		*	mg/L	10	20	06/22/13 10:14	dcw
Sulfate	M300.0 - Ion Chromatography	1	32.2		*	mg/L	0.5	2.5	06/28/13 0:27	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12799***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG346540													
WG346540LFB1	LFB	06/27/13 15:24	WI130501-1	30		31.3	mg/L	104.3	90	110			
L12763-01DUP	DUP	06/27/13 20:22			U	U	mg/L				0	20	RA
L12763-02AS	AS	06/27/13 20:57	WI130501-1	15000	U	16000	mg/L	106.7	90	110			
WG346540LFB2	LFB	06/27/13 23:52	WI130501-1	30		31.5	mg/L	105	90	110			
L12819-08DUP	DUP	06/28/13 2:47			5.76	5.68	mg/L				1.4	20	RA
L12819-10AS	AS	06/28/13 3:22	WI130501-1	150	3.06	165	mg/L	108	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG346540													
WG346540LFB1	LFB	06/27/13 15:24	WI130501-1	1.5		1.58	mg/L	105.3	90	110			
L12763-01DUP	DUP	06/27/13 20:22			U	U	mg/L				0	20	RA
L12763-02AS	AS	06/27/13 20:57	WI130501-1	750	88.1	938	mg/L	113.3	90	110			M1
WG346540LFB2	LFB	06/27/13 23:52	WI130501-1	1.5		1.58	mg/L	105.3	90	110			
L12819-08DUP	DUP	06/28/13 2:47			U	U	mg/L				0	20	RA
L12819-10AS	AS	06/28/13 3:22	WI130501-1	7.5	U	8.42	mg/L	112.3	90	110			M1

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346008													
WG346008ICV	ICV	06/19/13 21:53	WI130411-3	2.416		2.467	mg/L	102.1	90	110			
WG346008ICB	ICB	06/19/13 21:55				U	mg/L		-0.06	0.06			
WG346008LFB	LFB	06/19/13 21:58	WI130215-3	2		1.999	mg/L	100	90	110			
L12789-01AS	AS	06/19/13 22:01	WI130215-3	2	.25	1.919	mg/L	83.5	90	110			M2
L12792-01DUP	DUP	06/19/13 22:30			11.4	11.47	mg/L				0.6	20	

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346008													
WG346008ICV	ICV	06/19/13 21:53	WI130411-3	.609		.589	mg/L	96.7	90	110			
WG346008ICB	ICB	06/19/13 21:55				U	mg/L		-0.03	0.03			
WG346008LFB	LFB	06/19/13 21:58	WI130215-3	1		1.021	mg/L	102.1	90	110			
L12789-01AS	AS	06/19/13 22:01	WI130215-3	1	.02	.926	mg/L	90.6	90	110			
L12792-01DUP	DUP	06/19/13 22:03			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L12799***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346204													
WG346204PBW	PBW	06/22/13 9:55				U	mg/L		-20	20			
WG346204LCSW	LCSW	06/22/13 9:56	PCN42881	260		256	mg/L	98.5	80	120			
L12817-01DUP	DUP	06/22/13 10:22			U	U	mg/L				0	10	RA
L12821-04DUP	DUP	06/22/13 10:29			760	740	mg/L				2.7	10	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG346540													
WG346540LFB1	LFB	06/27/13 15:24	WI130501-1	30		31.3	mg/L	104.3	90	110			
L12763-01DUP	DUP	06/27/13 20:22			U	U	mg/L				0	20	RA
WG346540LFB2	LFB	06/27/13 23:52	WI130501-1	30		30.6	mg/L	102	90	110			
L12819-08DUP	DUP	06/28/13 2:47			486	494	mg/L				1.6	20	
L12819-10AS	AS	06/28/13 3:22	WI130501-1	150	93.6	258	mg/L	109.6	90	110			
L12763-02AS	AS	06/28/13 13:22	WI130501-1	30000	45200	77900	mg/L	109	90	110			

SPF Water Engineering ACZ Project ID: ***L12799***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12799-01	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12799***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12799-02	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12799***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12799-03	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L12799***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12799-04	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12799-05	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L12799***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12799-06	WG346540	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346008	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346204	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG346540	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L12799***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Winter Sampling

ACZ Project ID: L12799
Date Received: 06/19/2013 10:30
Received By: ksj
Date Printed: 6/19/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3718	15.9	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L12799

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr Ste 350 Boise ID 83706
Company: SPF Water Engineering	
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLOS-WETCHE

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote SHORT-HOLDS-WET							
PW-4	6-17-13 11:20	GW	1	X							
GW-4	6-17-13 12:35	GW	1	X							
59766	6-17-13 14:25	GW	1	X							
GW-1	6-17-13 15:40	GW	1	X							
GW-1-D	6-17-13 15:45	GW	1	X							
PW-1	6-17-13 18:15	GW	1	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

L12799 Chain of Custody

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	6-17-13 21:20	[illegible]	6.19.13 10:30

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 12, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12835

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 20, 2013. This project has been assigned to ACZ's project number, L12835. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12835. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 11, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering

July 12, 2013

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12835

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 7 ground water samples from SPF Water Engineering on June 20, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L12835. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report:

1. For sample L12835-02, the dissolved and total Cobalt values were verified by re-digestion and re-analysis with no significant change.

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L12835-01***
Date Sampled: *06/17/13 11:20*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 7:55	mla
Cyanide, WAD	SM4500-CN I- distillation								06/27/13 13:13	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 10:18	mla
Total Hot Plate Digestion	M200.2 ICP								07/05/13 9:13	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 9:26	las

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L12835-01***
Date Sampled: *06/17/13 11:20*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 14:19	aeb
Aluminum, total	M200.7 ICP	1	7.75			mg/L	0.03	0.2	06/27/13 15:02	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/28/13 2:30	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/01/13 19:48	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0126			mg/L	0.0002	0.001	06/28/13 2:30	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0170			mg/L	0.0002	0.001	07/01/13 19:48	pmc
Barium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	06/28/13 22:14	jjc
Barium, total	M200.7 ICP	1	0.019	B		mg/L	0.003	0.02	06/27/13 15:02	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:30	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00038			mg/L	0.00005	0.0003	07/01/13 19:48	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:14	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:02	jjc
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/02/13 12:47	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/05/13 20:02	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:30	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:48	pmc
Calcium, dissolved	M200.7 ICP	1	9.6			mg/L	0.2	1	06/28/13 22:14	jjc
Calcium, total	M200.7 ICP	1	13.5			mg/L	0.2	1	06/27/13 15:02	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/28/13 2:30	pmc
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/01/13 19:48	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	06/28/13 2:30	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00037			mg/L	0.00005	0.0003	07/01/13 19:48	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/28/13 2:30	pmc
Copper, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.003	07/01/13 19:48	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:14	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:02	jjc
Iron, dissolved	M200.7 ICP	1	0.27			mg/L	0.02	0.05	07/01/13 14:19	aeb
Iron, total	M200.7 ICP	1	7.30		*	mg/L	0.02	0.05	06/27/13 15:02	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:30	pmc
Lead, total	M200.8 ICP-MS	1	0.0072			mg/L	0.0001	0.0005	07/01/13 19:48	pmc
Lithium, dissolved	M200.7 ICP	1	0.11			mg/L	0.02	0.1	06/28/13 22:14	jjc
Lithium, total	M200.7 ICP	1	0.10			mg/L	0.02	0.1	06/27/13 15:02	jjc
Magnesium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	06/28/13 22:14	jjc
Magnesium, total	M200.7 ICP	1	1.7			mg/L	0.2	1	06/27/13 15:02	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0410		*	mg/L	0.0005	0.003	06/28/13 2:30	pmc
Manganese, total	M200.8 ICP-MS	1	0.0753			mg/L	0.0005	0.003	07/01/13 19:48	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5	2	B	*	ng/L	1	3	06/28/13 10:33	las
Mercury, total	M1631, Atomic Fluorescence	20	16			ng/L	4	10	06/26/13 16:02	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0108			mg/L	0.0005	0.003	06/28/13 2:30	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0120			mg/L	0.0005	0.003	07/01/13 19:48	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/13 2:30	pmc
Nickel, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0006	0.003	07/01/13 19:48	pmc
Potassium, dissolved	M200.7 ICP	1	1.2	B		mg/L	0.3	2	06/28/13 22:14	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L12835-01***
Date Sampled: *06/17/13 11:20*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.2	B		mg/L	0.3	2	06/27/13 15:02	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:14	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:02	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	06/28/13 2:30	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/01/13 19:48	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:30	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 19:48	pmc
Sodium, dissolved	M200.7 ICP	1	193			mg/L	0.3	2	06/28/13 22:14	jjc
Sodium, total	M200.7 ICP	1	185			mg/L	0.3	2	06/27/13 15:02	jjc
Strontium, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	06/28/13 22:14	jjc
Strontium, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	06/27/13 15:02	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:30	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:48	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:30	pmc
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	07/01/13 19:48	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:14	jjc
Titanium, total	M200.7 ICP	1	0.027	B		mg/L	0.005	0.03	06/27/13 15:02	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:30	pmc
Uranium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	07/01/13 19:48	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	06/28/13 2:30	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	07/01/13 19:48	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/28/13 22:14	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/27/13 15:02	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	188		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	13	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	200		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	893		*	umhos/cm	1	10	06/22/13 17:58	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:17	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:44	bsu
Hardness as CaCO3	SM2340B - Calculation		26			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.13	B	*	mg/L	0.05	0.5	07/01/13 16:15	mpb
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.14		*	mg/L	0.01	0.05	06/28/13 0:00	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	4	260		*	mg/L	20	80	06/24/13 10:47	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L12835-02***
Date Sampled: *06/17/13 12:35*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 8:06	mla
Cyanide, WAD	SM4500-CN I- distillation								06/27/13 13:26	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 10:27	mla
Total Hot Plate Digestion	M200.2 ICP-MS								07/09/13 13:56	las
Total Hot Plate Digestion	M200.2 ICP								06/26/13 19:35	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L12835-02***
Date Sampled: *06/17/13 12:35*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	07/01/13 14:22	aeb
Aluminum, total	M200.7 ICP	1	0.95			mg/L	0.03	0.2	06/27/13 15:05	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/28/13 2:39	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/01/13 19:51	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0115			mg/L	0.0002	0.001	06/28/13 2:39	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0118			mg/L	0.0002	0.001	07/01/13 19:51	pmc
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	06/28/13 22:24	jjc
Barium, total	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	06/27/13 15:05	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:39	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	07/01/13 19:51	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:24	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:05	jjc
Boron, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	06/28/13 22:24	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	06/27/13 15:05	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:39	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:51	pmc
Calcium, dissolved	M200.7 ICP	1	4.0			mg/L	0.2	1	06/28/13 22:24	jjc
Calcium, total	M200.7 ICP	1	4.2			mg/L	0.2	1	06/27/13 15:05	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/28/13 2:39	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/01/13 19:51	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00121			mg/L	0.00005	0.0003	07/09/13 23:09	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/10/13 16:10	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/28/13 2:39	pmc
Copper, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	07/01/13 19:51	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:24	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:05	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 14:22	aeb
Iron, total	M200.7 ICP	1	0.36		*	mg/L	0.02	0.05	06/27/13 15:05	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:39	pmc
Lead, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	07/01/13 19:51	pmc
Lithium, dissolved	M200.7 ICP	1	0.10			mg/L	0.02	0.1	06/28/13 22:24	jjc
Lithium, total	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	06/27/13 15:05	jjc
Magnesium, dissolved	M200.7 ICP	1	0.2	B		mg/L	0.2	1	06/28/13 22:24	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	06/27/13 15:05	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0071		*	mg/L	0.0005	0.003	06/28/13 2:39	pmc
Manganese, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0005	0.003	07/01/13 19:51	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	06/28/13 10:39	las
Mercury, total	M1631, Atomic Fluorescence	10	2	B	*	ng/L	2	5	06/26/13 16:09	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	06/28/13 2:39	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	07/01/13 19:51	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/13 2:39	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/01/13 19:51	pmc
Potassium, dissolved	M200.7 ICP	1	0.9	B		mg/L	0.3	2	06/28/13 22:24	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L12835-02***
Date Sampled: *06/17/13 12:35*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.3	2	06/27/13 15:05	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:24	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:05	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	06/28/13 2:39	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/01/13 19:51	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:39	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 19:51	pmc
Sodium, dissolved	M200.7 ICP	1	156			mg/L	0.3	2	06/28/13 22:24	jjc
Sodium, total	M200.7 ICP	1	150			mg/L	0.3	2	06/27/13 15:05	jjc
Strontium, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	06/28/13 22:24	jjc
Strontium, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	06/27/13 15:05	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:39	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:51	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:39	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/01/13 19:51	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:24	jjc
Titanium, total	M200.7 ICP	1	0.010	B		mg/L	0.005	0.03	06/27/13 15:05	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:39	pmc
Uranium, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	07/01/13 19:51	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	06/28/13 2:39	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0002	0.001	07/01/13 19:51	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/28/13 22:24	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/27/13 15:05	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	178		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	16	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	194		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	681		*	umhos/cm	1	10	06/22/13 18:07	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:19	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:45	bsu
Hardness as CaCO3	SM2340B - Calculation		11			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.09	B	*	mg/L	0.05	0.5	07/01/13 16:18	mpb
pH (lab)	SM4500H+ B									
pH		1	8.7	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	23.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	06/28/13 0:01	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	23		*	mg/L	5	20	06/24/13 10:48	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59766

ACZ Sample ID: ***L12835-03***
Date Sampled: *06/17/13 14:25*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 8:17	mla
Cyanide, WAD	SM4500-CN I- distillation								06/27/13 13:39	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 10:36	mla
Total Hot Plate Digestion	M200.2 ICP								06/26/13 19:47	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 10:12	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59766

ACZ Sample ID: ***L12835-03***
Date Sampled: *06/17/13 14:25*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 14:25	aeb
Aluminum, total	M200.7 ICP	1	8.36			mg/L	0.03	0.2	06/27/13 15:08	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	06/28/13 2:42	pmc
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/01/13 19:54	pmc
Arsenic, dissolved	M200.8 ICP-MS	4	0.2094			mg/L	0.0008	0.004	07/02/13 4:08	pmc
Arsenic, total	M200.8 ICP-MS	5	0.259			mg/L	0.001	0.005	07/01/13 20:33	pmc
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	06/28/13 22:27	jjc
Barium, total	M200.7 ICP	1	0.183			mg/L	0.003	0.02	06/27/13 15:08	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	06/28/13 2:42	pmc
Beryllium, total	M200.8 ICP-MS	5	0.0013			mg/L	0.0003	0.001	07/01/13 20:33	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:27	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:08	jjc
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	06/28/13 22:27	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	06/27/13 15:08	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:42	pmc
Cadmium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0005	07/01/13 19:54	pmc
Calcium, dissolved	M200.7 ICP	1	40.7			mg/L	0.2	1	06/28/13 22:27	jjc
Calcium, total	M200.7 ICP	1	42.7			mg/L	0.2	1	06/27/13 15:08	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/28/13 2:42	pmc
Chromium, total	M200.8 ICP-MS	1	0.0055			mg/L	0.0005	0.002	07/01/13 19:54	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00156			mg/L	0.00005	0.0003	06/28/13 2:42	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00431			mg/L	0.00005	0.0003	07/01/13 19:54	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	06/28/13 2:42	pmc
Copper, total	M200.8 ICP-MS	1	0.0085			mg/L	0.0005	0.003	07/01/13 19:54	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:27	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:08	jjc
Iron, dissolved	M200.7 ICP	1	0.97			mg/L	0.02	0.05	07/01/13 14:25	aeb
Iron, total	M200.7 ICP	1	9.12		*	mg/L	0.02	0.05	06/27/13 15:08	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:42	pmc
Lead, total	M200.8 ICP-MS	1	0.0083			mg/L	0.0001	0.0005	07/01/13 19:54	pmc
Lithium, dissolved	M200.7 ICP	1	0.61			mg/L	0.02	0.1	06/28/13 22:27	jjc
Lithium, total	M200.7 ICP	1	0.58			mg/L	0.02	0.1	06/27/13 15:08	jjc
Magnesium, dissolved	M200.7 ICP	1	3.2			mg/L	0.2	1	06/28/13 22:27	jjc
Magnesium, total	M200.7 ICP	1	4.2			mg/L	0.2	1	06/27/13 15:08	jjc
Manganese, dissolved	M200.8 ICP-MS	4	0.475			mg/L	0.002	0.01	07/02/13 4:08	pmc
Manganese, total	M200.8 ICP-MS	5	0.688			mg/L	0.003	0.01	07/01/13 20:33	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5	4			ng/L	1	3	06/28/13 10:46	las
Mercury, total	M1631, Atomic Fluorescence	10	40			ng/L	2	5	06/26/13 16:15	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0300			mg/L	0.0005	0.003	06/28/13 2:42	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0315			mg/L	0.0005	0.003	07/01/13 19:54	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0054			mg/L	0.0006	0.003	06/28/13 2:42	pmc
Nickel, total	M200.8 ICP-MS	1	0.0094			mg/L	0.0006	0.003	07/01/13 19:54	pmc
Potassium, dissolved	M200.7 ICP	1	10.3			mg/L	0.3	2	06/28/13 22:27	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59766

ACZ Sample ID: ***L12835-03***
Date Sampled: *06/17/13 14:25*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	11.4			mg/L	0.3	2	06/27/13 15:08	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:27	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:08	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	06/28/13 2:42	pmc
Selenium, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0003	07/01/13 19:54	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:42	pmc
Silver, total	M200.8 ICP-MS	1	0.00025	B		mg/L	0.00005	0.0003	07/01/13 19:54	pmc
Sodium, dissolved	M200.7 ICP	1	147			mg/L	0.3	2	06/28/13 22:27	jjc
Sodium, total	M200.7 ICP	1	140			mg/L	0.3	2	06/27/13 15:08	jjc
Strontium, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	06/28/13 22:27	jjc
Strontium, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	06/27/13 15:08	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:42	pmc
Thallium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/01/13 19:54	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:42	pmc
Tin, total	M200.8 ICP-MS	1	0.0012		*	mg/L	0.0001	0.0005	07/01/13 19:54	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:27	jjc
Titanium, total	M200.7 ICP	1	0.318			mg/L	0.005	0.03	06/27/13 15:08	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	06/28/13 2:42	pmc
Uranium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	07/01/13 19:54	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0010			mg/L	0.0002	0.001	06/28/13 2:42	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0130			mg/L	0.0002	0.001	07/01/13 19:54	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/28/13 22:27	jjc
Zinc, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	06/27/13 15:08	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	95		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	95		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	894		*	umhos/cm	1	10	06/22/13 18:16	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:20	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:47	bsu
Hardness as CaCO3	SM2340B - Calculation		115			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 16:19	mpb
pH (lab)	SM4500H+ B									
pH		1	7.9	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	2	1.05		*	mg/L	0.02	0.1	06/28/13 0:26	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	2	300		*	mg/L	10	40	06/24/13 10:50	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L12835-04***
Date Sampled: *06/17/13 15:40*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 8:22	mla
Cyanide, WAD	SM4500-CN I- distillation								06/27/13 13:46	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 10:45	mla
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 10:35	las
Total Hot Plate Digestion	M200.2 ICP								06/26/13 19:59	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L12835-04***
Date Sampled: *06/17/13 15:40*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 14:35	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	06/27/13 15:11	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	06/28/13 2:46	pmc
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	07/01/13 19:57	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0304			mg/L	0.0002	0.001	06/28/13 2:46	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0300			mg/L	0.0002	0.001	07/01/13 19:57	pmc
Barium, dissolved	M200.7 ICP	1	0.034			mg/L	0.003	0.02	06/28/13 22:30	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	06/27/13 15:11	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:46	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 19:57	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:30	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:11	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	06/28/13 22:30	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	06/27/13 15:11	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:46	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:57	pmc
Calcium, dissolved	M200.7 ICP	1	46.7			mg/L	0.2	1	06/28/13 22:30	jjc
Calcium, total	M200.7 ICP	1	45.4			mg/L	0.2	1	06/27/13 15:11	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	06/28/13 2:46	pmc
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/01/13 19:57	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	06/28/13 2:46	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	07/01/13 19:57	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	06/28/13 2:46	pmc
Copper, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	07/01/13 19:57	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:30	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:11	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 14:35	aeb
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	06/27/13 15:11	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:46	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:57	pmc
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	06/28/13 22:30	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	06/27/13 15:11	jjc
Magnesium, dissolved	M200.7 ICP	1	8.9			mg/L	0.2	1	06/28/13 22:30	jjc
Magnesium, total	M200.7 ICP	1	8.7			mg/L	0.2	1	06/27/13 15:11	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	06/28/13 2:46	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/01/13 19:57	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	06/28/13 10:53	las
Mercury, total	M1631, Atomic Fluorescence	2	0.8	B	*	ng/L	0.4	1	06/26/13 16:22	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	06/28/13 2:46	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.003	07/01/13 19:57	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/13 2:46	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/01/13 19:57	pmc
Potassium, dissolved	M200.7 ICP	1	6.5			mg/L	0.3	2	06/28/13 22:30	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L12835-04***
Date Sampled: *06/17/13 15:40*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.2			mg/L	0.3	2	06/27/13 15:11	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:30	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:11	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0003	06/28/13 2:46	pmc
Selenium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0003	07/01/13 19:57	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:46	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 19:57	pmc
Sodium, dissolved	M200.7 ICP	1	27.3			mg/L	0.3	2	06/28/13 22:30	jjc
Sodium, total	M200.7 ICP	1	26.5			mg/L	0.3	2	06/27/13 15:11	jjc
Strontium, dissolved	M200.7 ICP	1	0.23			mg/L	0.01	0.05	06/28/13 22:30	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	06/27/13 15:11	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:46	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 19:57	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:46	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/01/13 19:57	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:30	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	06/27/13 15:11	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	06/28/13 2:46	pmc
Uranium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	07/01/13 19:57	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0184			mg/L	0.0002	0.001	06/28/13 2:46	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0188			mg/L	0.0002	0.001	07/01/13 19:57	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/28/13 22:30	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/27/13 15:11	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	145		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	4	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	149		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	421		*	umhos/cm	1	10	06/22/13 18:25	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:21	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:48	bsu
Hardness as CaCO3	SM2340B - Calculation		153			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 16:20	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	06/28/13 0:06	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/24/13 10:51	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1-D

ACZ Sample ID: ***L12835-05***
Date Sampled: *06/17/13 15:45*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 8:28	mla
Cyanide, WAD	SM4500-CN I- distillation								06/27/13 13:52	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 10:54	mla
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 10:58	las
Total Hot Plate Digestion	M200.2 ICP								06/26/13 20:10	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1-D

ACZ Sample ID: ***L12835-05***
Date Sampled: *06/17/13 15:45*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 14:38	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	06/27/13 15:14	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	06/28/13 2:49	pmc
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	07/01/13 20:01	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0310			mg/L	0.0002	0.001	06/28/13 2:49	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0297			mg/L	0.0002	0.001	07/01/13 20:01	pmc
Barium, dissolved	M200.7 ICP	1	0.034			mg/L	0.003	0.02	06/28/13 22:33	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	06/27/13 15:14	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:49	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 20:01	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:33	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:14	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	06/28/13 22:33	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	06/27/13 15:14	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:49	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:01	pmc
Calcium, dissolved	M200.7 ICP	1	47.3			mg/L	0.2	1	06/28/13 22:33	jjc
Calcium, total	M200.7 ICP	1	44.9			mg/L	0.2	1	06/27/13 15:14	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	06/28/13 2:49	pmc
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	07/01/13 20:01	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	06/28/13 2:49	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	07/01/13 20:01	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	06/28/13 2:49	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/01/13 20:01	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:33	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:14	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 14:38	aeb
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	06/27/13 15:14	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:49	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:01	pmc
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	06/28/13 22:33	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	06/27/13 15:14	jjc
Magnesium, dissolved	M200.7 ICP	1	9.1			mg/L	0.2	1	06/28/13 22:33	jjc
Magnesium, total	M200.7 ICP	1	8.6			mg/L	0.2	1	06/27/13 15:14	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	06/28/13 2:49	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/01/13 20:01	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	06/28/13 10:59	las
Mercury, total	M1631, Atomic Fluorescence	2	0.5	B	*	ng/L	0.4	1	06/26/13 16:29	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	06/28/13 2:49	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	07/01/13 20:01	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/13 2:49	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/01/13 20:01	pmc
Potassium, dissolved	M200.7 ICP	1	6.5			mg/L	0.3	2	06/28/13 22:33	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GW-1-D

ACZ Sample ID: ***L12835-05***
Date Sampled: *06/17/13 15:45*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.3	2	06/27/13 15:14	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:33	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:14	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0003	06/28/13 2:49	pmc
Selenium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0003	07/01/13 20:01	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:49	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 20:01	pmc
Sodium, dissolved	M200.7 ICP	1	27.7			mg/L	0.3	2	06/28/13 22:33	jjc
Sodium, total	M200.7 ICP	1	26.2			mg/L	0.3	2	06/27/13 15:14	jjc
Strontium, dissolved	M200.7 ICP	1	0.23			mg/L	0.01	0.05	06/28/13 22:33	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	06/27/13 15:14	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:49	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:01	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:49	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/01/13 20:01	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:33	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	06/27/13 15:14	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	06/28/13 2:49	pmc
Uranium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	07/01/13 20:01	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0185			mg/L	0.0002	0.001	06/28/13 2:49	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0188			mg/L	0.0002	0.001	07/01/13 20:01	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/28/13 22:33	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/27/13 15:14	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	145		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	4	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	149		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	425		*	umhos/cm	1	10	06/22/13 18:33	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:22	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:49	bsu
Hardness as CaCO3	SM2340B - Calculation		156			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 16:21	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	06/28/13 0:07	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5	B	*	mg/L	5	20	06/24/13 10:52	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L12835-06***
Date Sampled: *06/17/13 18:15*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/27/13 8:33	mla
Cyanide, WAD	SM4500-CN I- distillation		-						06/27/13 13:59	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/27/13 11:03	mla
Total Hot Plate Digestion	M200.2 ICP								06/26/13 20:22	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 11:21	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L12835-06***
Date Sampled: *06/17/13 18:15*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 14:41	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	06/27/13 15:17	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/28/13 2:52	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/01/13 20:04	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0309			mg/L	0.0002	0.001	06/28/13 2:52	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0307			mg/L	0.0002	0.001	07/01/13 20:04	pmc
Barium, dissolved	M200.7 ICP	1	0.033			mg/L	0.003	0.02	06/28/13 22:36	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	06/27/13 15:17	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:52	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 20:04	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/28/13 22:36	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/27/13 15:17	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	06/28/13 22:36	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	06/27/13 15:17	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:52	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:04	pmc
Calcium, dissolved	M200.7 ICP	1	30.5			mg/L	0.2	1	06/28/13 22:36	jjc
Calcium, total	M200.7 ICP	1	29.2			mg/L	0.2	1	06/27/13 15:17	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	06/28/13 2:52	pmc
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	07/01/13 20:04	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	06/28/13 2:52	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	07/01/13 20:04	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	06/28/13 2:52	pmc
Copper, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	07/01/13 20:04	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:36	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:17	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 14:41	aeb
Iron, total	M200.7 ICP	1	0.68		*	mg/L	0.02	0.05	06/27/13 15:17	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:52	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:04	pmc
Lithium, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.02	0.1	06/28/13 22:36	jjc
Lithium, total	M200.7 ICP	1	0.06	B		mg/L	0.02	0.1	06/27/13 15:17	jjc
Magnesium, dissolved	M200.7 ICP	1	3.6			mg/L	0.2	1	06/28/13 22:36	jjc
Magnesium, total	M200.7 ICP	1	3.3			mg/L	0.2	1	06/27/13 15:17	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0027	B	*	mg/L	0.0005	0.003	06/28/13 2:52	pmc
Manganese, total	M200.8 ICP-MS	1	0.0079			mg/L	0.0005	0.003	07/01/13 20:04	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	06/28/13 11:06	las
Mercury, total	M1631, Atomic Fluorescence	2	0.4	B	*	ng/L	0.4	1	06/26/13 16:35	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	06/28/13 2:52	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0047			mg/L	0.0005	0.003	07/01/13 20:04	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/13 2:52	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/01/13 20:04	pmc
Potassium, dissolved	M200.7 ICP	1	6.2			mg/L	0.3	2	06/28/13 22:36	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L12835-06***
Date Sampled: *06/17/13 18:15*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.3	2	06/27/13 15:17	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/28/13 22:36	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/13 15:17	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0003	06/28/13 2:52	pmc
Selenium, total	M200.8 ICP-MS	1	0.0041			mg/L	0.0001	0.0003	07/01/13 20:04	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/13 2:52	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/01/13 20:04	pmc
Sodium, dissolved	M200.7 ICP	1	40.0			mg/L	0.3	2	06/28/13 22:36	jjc
Sodium, total	M200.7 ICP	1	38.3			mg/L	0.3	2	06/27/13 15:17	jjc
Strontium, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	06/28/13 22:36	jjc
Strontium, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	06/27/13 15:17	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/13 2:52	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/01/13 20:04	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/13 2:52	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/01/13 20:04	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/28/13 22:36	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	06/27/13 15:17	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0023			mg/L	0.0001	0.0005	06/28/13 2:52	pmc
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	07/01/13 20:04	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0102			mg/L	0.0002	0.001	06/28/13 2:52	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0105			mg/L	0.0002	0.001	07/01/13 20:04	pmc
Zinc, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	06/28/13 22:36	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/27/13 15:17	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	125		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	6	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	131		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	356		*	umhos/cm	1	10	06/22/13 18:42	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 15:23	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/28/13 14:49	bsu
Hardness as CaCO3	SM2340B - Calculation		91			mg/L	1	7	07/12/13 0:00	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 16:23	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	06/28/13 0:08	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/24/13 10:54	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TRIP/FIELD BLANK

ACZ Sample ID: ***L12835-07***
Date Sampled: *06/17/13 18:25*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	06/26/13 14:09	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12835***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203PBW1	PBW	06/22/13 10:56				16.2	mg/L		-20	20			
WG346203LCSW2	LCSW	06/22/13 11:08	WC130613-	820.0001		752.5	mg/L	91.8	90	110			
WG346203LCSW5	LCSW	06/22/13 13:44	WC130613-	820.0001		783.1	mg/L	95.5	90	110			
WG346203PBW2	PBW	06/22/13 13:52				2.5	mg/L		-20	20			
WG346203LCSW8	LCSW	06/22/13 17:32	WC130613-	820.0001		787.9	mg/L	96.1	90	110			
WG346203PBW3	PBW	06/22/13 17:41				3.8	mg/L		-20	20			
L12837-03DUP	DUP	06/22/13 19:00			U	U	mg/L				0	20	RA
WG346203LCSW11	LCSW	06/22/13 20:10	WC130613-	820.0001		770.5	mg/L	94	90	110			
WG346203PBW4	PBW	06/22/13 20:18				2.8	mg/L		-20	20			
WG346203LCSW14	LCSW	06/22/13 23:40	WC130613-	820.0001		776.6	mg/L	94.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346757													
WG346757ICV	ICV	07/01/13 13:39	II130510-1	2		2.033	mg/L	101.7	95	105			
WG346757ICB	ICB	07/01/13 13:44				U	mg/L		-0.09	0.09			
WG346757LFB	LFB	07/01/13 13:57	II130621-2	1.0011		1.038	mg/L	103.7	85	115			
L12709-01AS	AS	07/01/13 14:13	II130621-2	1.0011	U	1.074	mg/L	107.3	85	115			
L12709-01ASD	ASD	07/01/13 14:16	II130621-2	1.0011	U	1.071	mg/L	107	85	115	0.28	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		1.989	mg/L	99.5	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.09	0.09			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.066	0.066			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1.0011		1.012	mg/L	101.1	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1.0011	U	1.028	mg/L	102.7	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1.0011	U	1.033	mg/L	103.2	70	130	0.49	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.02		.02127	mg/L	106.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0012	0.0012			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.01		.00958	mg/L	95.8	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.01	U	.00947	mg/L	94.7	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.01	U	.00973	mg/L	97.3	70	130	2.71	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.02		.02059	mg/L	103	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0012	0.0012			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00088	0.00088			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.01		.00998	mg/L	99.8	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.01	U	.01016	mg/L	101.6	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.01	U	.01014	mg/L	101.4	70	130	0.2	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.0522	mg/L	104.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0006	0.0006			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.0507	mg/L	101.3	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.05457	mg/L	109	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.0551	mg/L	110.1	70	130	0.97	20	
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05327	mg/L	106.5	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0006	0.0006			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05202	mg/L	103.9	85	115			
L12730-01AS	AS	07/02/13 3:58	MS130614-1	.05005	.0012	.0563	mg/L	110.1	70	130			
L12730-01ASD	ASD	07/02/13 4:02	MS130614-1	.05005	.0012	.0557	mg/L	108.9	70	130	1.07	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05176	mg/L	103.5	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0006	0.0006			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00044	0.00044			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.05242	mg/L	104.7	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	.0008	.05088	mg/L	100.1	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	.0008	.05116	mg/L	100.6	70	130	0.55	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		1.995	mg/L	99.8	95	105			
WG346575ICB	ICB	06/28/13 21:55				.0035	mg/L		-0.009	0.009			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	.5		.5364	mg/L	107.3	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	.5	.006	.537	mg/L	106.2	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	.5	.006	.5382	mg/L	106.4	85	115	0.22	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.005	mg/L	100.3	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.009	0.009			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.0066	0.0066			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	.5		.5048	mg/L	101	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	.5	.016	.5176	mg/L	100.3	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	.5	.016	.5215	mg/L	101.1	70	130	0.75	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.04766	mg/L	95.3	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.00015	0.00015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.0501		.04882	mg/L	97.4	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.0501	.00083	.04935	mg/L	96.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.0501	.00083	.04918	mg/L	96.5	70	130	0.35	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.04731	mg/L	94.6	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.00015	0.00015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00011	0.00011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.0501		.04801	mg/L	95.8	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.0501	U	.04874	mg/L	97.3	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.0501	U	.04844	mg/L	96.7	70	130	0.62	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		1.981	mg/L	99.1	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.12	0.12			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	1		1.056	mg/L	105.6	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	1	U	1.067	mg/L	106.7	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	1	U	1.069	mg/L	106.9	85	115	0.19	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.007	mg/L	100.4	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.12	0.12			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.088	0.088			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1		1.015	mg/L	101.5	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1	U	.989	mg/L	98.9	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1	U	1	mg/L	100	70	130	1.11	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		2.011	mg/L	100.6	95	105			
WG346575ICB	ICB	06/28/13 21:55				.012	mg/L		-0.03	0.03			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	.5005		.542	mg/L	108.3	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	.5005	.15	.684	mg/L	106.7	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	.5005	.15	.683	mg/L	106.5	85	115	0.15	20	
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	2		1.997	mg/L	99.9	95	105			
WG346850ICB	ICB	07/02/13 12:32				.012	mg/L		-0.03	0.03			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	.5005		.508	mg/L	101.5	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	.5005	.14	.623	mg/L	96.5	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	.5005	.14	.628	mg/L	97.5	85	115	0.8	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.091	mg/L	104.6	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.03	0.03			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.022	0.022			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	.5005		.536	mg/L	107.1	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	.5005	U	.532	mg/L	106.3	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	.5005	U	.539	mg/L	107.7	70	130	1.31	20	
WG347065													
WG347065ICV	ICV	07/05/13 19:38	II130514-1	2		2.046	mg/L	102.3	95	105			
WG347065ICB	ICB	07/05/13 19:44				U	mg/L		-0.03	0.03			
WG347013LRB	LRB	07/05/13 19:56				U	mg/L		-0.022	0.022			
WG347013LFB	LFB	07/05/13 19:59	II130621-2	.5005		.533	mg/L	106.5	85	115			
L12953-03LFM	LFM	07/05/13 20:15	II130621-2	.5005	10.4	10.92	mg/L	103.9	70	130			
L12953-03LFMD	LFMD	07/05/13 20:18	II130621-2	.5005	10.4	10.91	mg/L	101.9	70	130	0.09	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.0512	mg/L	102.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.0501		.05117	mg/L	102.1	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.0501	.0002	.05068	mg/L	100.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.0501	.0002	.05108	mg/L	101.6	70	130	0.79	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05067	mg/L	101.3	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.0501		.04995	mg/L	99.7	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.0501	.0007	.05004	mg/L	98.5	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.0501	.0007	.04985	mg/L	98.1	70	130	0.38	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	100		98.35	mg/L	98.4	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.6	0.6			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	67.95918		73.13	mg/L	107.6	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	67.95918	9.6	83.21	mg/L	108.3	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	67.95918	9.6	83.07	mg/L	108.1	85	115	0.17	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	100		99.54	mg/L	99.5	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.6	0.6			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.44	0.44			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	67.95918		70.57	mg/L	103.8	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	67.95918	3.6	73.22	mg/L	102.4	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	67.95918	3.6	73.65	mg/L	103.1	70	130	0.59	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.04982	mg/L	99.6	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0015	0.0015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.04953	mg/L	99	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.04897	mg/L	97.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.04859	mg/L	97.1	70	130	0.78	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.0494	mg/L	98.8	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0015	0.0015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.0011	0.0011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04987	mg/L	99.6	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	U	.04683	mg/L	93.6	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	U	.04714	mg/L	94.2	70	130	0.66	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05034	mg/L	100.7	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.00015	0.00015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.05117	mg/L	102.2	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	.01232	.06025	mg/L	95.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	.01232	.05955	mg/L	94.4	70	130	1.17	20	
WG347216													
WG347216ICV	ICV	07/09/13 22:58	MS130416-2	.05		.04902	mg/L	98	90	110			
WG347216ICB	ICB	07/09/13 23:02				U	mg/L		-0.00015	0.00015			
WG347216LFB	LFB	07/09/13 23:05	MS130614-1	.05005		.04957	mg/L	99	85	115			
L12899-03AS	AS	07/09/13 23:29	MS130614-1	.1001	.0021	.10522	mg/L	103	70	130			
L12899-03ASD	ASD	07/09/13 23:32	MS130614-1	.1001	.0021	.10396	mg/L	101.8	70	130	1.2	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.04969	mg/L	99.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.00015	0.00015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00011	0.00011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.0509	mg/L	101.7	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	.00015	.04788	mg/L	95.4	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	.00015	.04749	mg/L	94.6	70	130	0.82	20	
WG347342													
WG347342ICV	ICV	07/10/13 15:11	MS130416-2	.05		.04988	mg/L	99.8	90	110			
WG347342ICB	ICB	07/10/13 15:15				U	mg/L		-0.00015	0.00015			
WG346834LRB	LRB	07/10/13 15:18				U	mg/L		-0.00011	0.00011			
WG346834LFB	LFB	07/10/13 15:21	MS130614-1	.05005		.05032	mg/L	100.5	85	115			
WG347209LRB	LRB	07/10/13 16:00				.000082	mg/L		-0.00011	0.00011			
WG347209LFB	LFB	07/10/13 16:03	MS130614-1	.05005		.0488	mg/L	97.5	85	115			
L12901-01LFM	LFM	07/10/13 16:42	MS2XW	.1	.0003	.09828	mg/L	98	70	130			
L12901-01LFMD	LFMD	07/10/13 16:45	MS2XW	.1	.0003	.09596	mg/L	95.7	70	130	2.39	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW1	LCSW	06/22/13 10:57	PCN41764	1408.8		1454.1	umhos/cm	103.2	90	110			
WG346203LCSW4	LCSW	06/22/13 13:32	PCN41764	1408.8		1422.2	umhos/cm	101	90	110			
WG346203LCSW7	LCSW	06/22/13 17:21	PCN41764	1408.8		1400.7	umhos/cm	99.4	90	110			
L12837-03DUP	DUP	06/22/13 19:00			575000	574000	umhos/cm				0.2	20	
WG346203LCSW10	LCSW	06/22/13 19:59	PCN41764	1408.8		1378.1	umhos/cm	97.8	90	110			
WG346203LCSW13	LCSW	06/22/13 23:29	PCN41764	1408.8		1350.3	umhos/cm	95.8	90	110			

SPF Water Engineering

ACZ Project ID: ***L12835***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05106	mg/L	102.1	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0015	0.0015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.04993	mg/L	99.8	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.05028	mg/L	100.5	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.04989	mg/L	99.7	70	130	0.78	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.0505	mg/L	101	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0015	0.0015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.0011	0.0011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.0509	mg/L	101.7	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	.0072	.05144	mg/L	88.4	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	.0072	.05135	mg/L	88.2	70	130	0.18	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346682													
WG346682ICV	ICV	06/28/13 13:53	WI130621-6	.3		.291	mg/L	97	90	110			
WG346682ICB	ICB	06/28/13 13:53				U	mg/L		-0.003	0.003			
WG346691													
WG346612LRB	LRB	06/28/13 15:15				U	mg/L		-0.003	0.003			
WG346612LFB	LFB	06/28/13 15:16	WI130621-2	.2		.1906	mg/L	95.3	90	110			
L12835-01DUP	DUP	06/28/13 15:18			U	U	mg/L				0	20	RA
L12835-02LFM	LFM	06/28/13 15:20	WI130621-2	.2	U	.1732	mg/L	86.6	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346682													
WG346682ICV	ICV	06/28/13 13:53	WI130621-6	.3		.291	mg/L	97	90	110			
WG346682ICB	ICB	06/28/13 13:53				U	mg/L		-0.003	0.003			
WG346687													
WG346576LRB	LRB	06/28/13 14:42				U	mg/L		-0.003	0.003			
WG346576LFB	LFB	06/28/13 14:43	WI130621-4	.2		.1915	mg/L	95.8	90	110			
L12835-01DUP	DUP	06/28/13 14:44			U	U	mg/L				0	20	RA
L12835-02LFM	LFM	06/28/13 14:46	WI130621-4	.2	U	.1869	mg/L	93.5	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		2.04	mg/L	102	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.3	0.3			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	1		1.09	mg/L	109	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	1	U	1.09	mg/L	109	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	1	U	1.11	mg/L	111	85	115	1.82	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.03	mg/L	101.5	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.3	0.3			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.22	0.22			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1		1.04	mg/L	104	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1	U	1.03	mg/L	103	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1	U	1.03	mg/L	103	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346757													
WG346757ICV	ICV	07/01/13 13:39	II130510-1	2		2.011	mg/L	100.6	95	105			
WG346757ICB	ICB	07/01/13 13:44				U	mg/L		-0.06	0.06			
WG346757LFB	LFB	07/01/13 13:57	II130621-2	1		1.023	mg/L	102.3	85	115			
L12709-01AS	AS	07/01/13 14:13	II130621-2	1	U	1.025	mg/L	102.5	85	115			
L12709-01ASD	ASD	07/01/13 14:16	II130621-2	1	U	1.029	mg/L	102.9	85	115	0.39	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.001	mg/L	100.1	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.06	0.06			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.044	0.044			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1		1.06	mg/L	106	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1	17.1	17.67	mg/L	57	70	130			M3
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1	17.1	18.01	mg/L	91	70	130	1.91	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05171	mg/L	103.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.04974	mg/L	99.4	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.04896	mg/L	97.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.04914	mg/L	98.2	70	130	0.37	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05151	mg/L	103	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04975	mg/L	99.4	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	.0002	.0499	mg/L	99.3	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	.0002	.04973	mg/L	99	70	130	0.34	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		2.006	mg/L	100.3	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.06	0.06			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	1		1.052	mg/L	105.2	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	1	.11	1.158	mg/L	104.8	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	1	.11	1.158	mg/L	104.8	85	115	0	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.021	mg/L	101.1	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.06	0.06			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.044	0.044			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1		.999	mg/L	99.9	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1	.03	1.019	mg/L	98.9	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1	.03	1.022	mg/L	99.2	70	130	0.29	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	100		97.89	mg/L	97.9	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.6	0.6			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	49.99941		51.65	mg/L	103.3	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	49.99941	.6	53.05	mg/L	104.9	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	49.99941	.6	52.89	mg/L	104.6	85	115	0.3	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	100		99.74	mg/L	99.7	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.6	0.6			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.44	0.44			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	49.99941		50.5	mg/L	101	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	49.99941	4.6	54.54	mg/L	99.9	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	49.99941	4.6	54.86	mg/L	100.5	70	130	0.59	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05079	mg/L	101.6	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0015	0.0015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.05082	mg/L	101.5	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	4.96	4.958	mg/L	-4	70	130			M3
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	4.96	4.886	mg/L	-147.9	70	130	1.46	20	M3
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05153	mg/L	103.1	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05516	mg/L	110.2	85	115			
L12730-01AS	AS	07/02/13 3:58	MS130614-1	.05005	.0077	.05896	mg/L	102.4	70	130			
L12730-01ASD	ASD	07/02/13 4:02	MS130614-1	.05005	.0077	.061	mg/L	106.5	70	130	3.4	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.04995	mg/L	99.9	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0015	0.0015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.0011	0.0011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.05051	mg/L	100.9	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	.0019	.05071	mg/L	97.5	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	.0019	.05024	mg/L	96.6	70	130	0.93	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346620													
WG346620CCV1	CCV	06/28/13 8:59	HG130517-4	10		11	ng/L	110	76.5	123.4			
WG346620CCB1	CCB	06/28/13 9:06				U	ng/L		-0.5	0.5			
WG346620PQV	PQV	06/28/13 9:12	HG130517-6	.5		.61	ng/L	122	70	130			
WG346620LFB	LFB	06/28/13 9:19	HG130517-5	2		2.36	ng/L	118	71	125			
L12802-01MS	MS	06/28/13 9:53	HG2XPREP	8	.9	5.47	ng/L	114.3	71	125			
L12802-01MSD	MSD	06/28/13 9:59	HG2XPREP	8	.9	5.41	ng/L	112.1	71	125	1.1	24	
WG346620CCV2	CCV	06/28/13 10:19	HG130517-4	10		11.35	ng/L	113.5	76.5	123.4			
WG346620CCB2	CCB	06/28/13 10:26				U	ng/L		-0.5	0.5			
WG346620CCV3	CCV	06/28/13 11:13	HG130517-4	10		11.14	ng/L	111.4	76.5	123.4			
WG346620CCB3	CCB	06/28/13 11:19				U	ng/L		-0.5	0.5			
WG346620CCV4	CCV	06/28/13 12:06	HG130517-4	10		10.56	ng/L	105.6	76.5	123.4			
WG346620CCB4	CCB	06/28/13 12:13				U	ng/L		-0.5	0.5			
WG346620CCV5	CCV	06/28/13 12:59	HG130517-4	10		10.14	ng/L	101.4	76.5	123.4			
WG346620CCB5	CCB	06/28/13 13:06				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L12835***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346300													
WG346300CCV1	CCV	06/26/13 12:41	HG130517-4	10		10.99	ng/L	109.9	76.5	123.4			
WG346300CCB1	CCB	06/26/13 12:47				U	ng/L		-0.5	0.5			
WG346300PQV	PQV	06/26/13 12:54	HG130517-6	.5		.64	ng/L	128	70	130			
WG346300LFB	LFB	06/26/13 13:01	HG130517-5	2		2.1	ng/L	105	71	125			
WG346300CCV2	CCV	06/26/13 14:15	HG130517-4	10		11	ng/L	110	76.5	123.4			
WG346300CCB2	CCB	06/26/13 14:22				U	ng/L		-0.5	0.5			
WG346300CCV3	CCV	06/26/13 14:55	HG130517-4	10		10.96	ng/L	109.6	76.5	123.4			
WG346300CCB3	CCB	06/26/13 15:02				U	ng/L		-0.5	0.5			
WG346300CCV4	CCV	06/26/13 15:49	HG130517-4	10		10	ng/L	100	76.5	123.4			
WG346300CCB4	CCB	06/26/13 15:55				U	ng/L		-0.5	0.5			
L12835-06MS	MS	06/26/13 16:42	HG2XPREP	8	.4	4.37	ng/L	99.3	71	125			
L12835-06MSD	MSD	06/26/13 16:49	HG2XPREP	8	.4	5	ng/L	115	71	125	13.45	24	
WG346300CCV5	CCV	06/26/13 16:55	HG130517-4	10		9.89	ng/L	98.9	76.5	123.4			
WG346300CCB5	CCB	06/26/13 17:02				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.02006		.02015	mg/L	100.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0015	0.0015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05		.04924	mg/L	98.5	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05	U	.04706	mg/L	94.1	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05	U	.04765	mg/L	95.3	70	130	1.25	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.02006		.02034	mg/L	101.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0015	0.0015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.0011	0.0011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05		.04927	mg/L	98.5	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05	.0009	.05039	mg/L	99	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05	.0009	.05029	mg/L	98.8	70	130	0.2	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05093	mg/L	101.9	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0018	0.0018			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.04949	mg/L	98.9	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	.0179	.06709	mg/L	98.3	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	.0179	.06591	mg/L	95.9	70	130	1.77	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05011	mg/L	100.2	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0018	0.0018			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00132	0.00132			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04932	mg/L	98.5	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	U	.04442	mg/L	88.8	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	U	.0449	mg/L	89.7	70	130	1.07	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346785													
WG346785ICV	ICV	07/01/13 13:42	WI121105-5	1.003		1	mg/L	99.7	90	110			
WG346785ICB	ICB	07/01/13 13:45				U	mg/L		-0.15	0.15			
WG346805													
WG346805LFB1	LFB	07/01/13 16:05	WI121218-3	1		1.037	mg/L	103.7	90	110			
L12709-01AS	AS	07/01/13 16:07	WI121218-3	1	U	1.083	mg/L	108.3	90	110			
L12712-01DUP	DUP	07/01/13 16:09			.24	.246	mg/L				2.5	20	RA
L12835-05AS	AS	07/01/13 16:22	WI121218-3	1	U	1.088	mg/L	108.8	90	110			
L12835-06DUP	DUP	07/01/13 16:24			U	U	mg/L				0	20	RA
WG346805LFB2	LFB	07/01/13 16:36	WI121218-3	1		1.099	mg/L	109.9	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW3	LCSW	06/22/13 11:12	PCN40853	6		6	units	100	98	102			
WG346203LCSW6	LCSW	06/22/13 13:47	PCN40853	6		6.01	units	100.2	98	102			
WG346203LCSW9	LCSW	06/22/13 17:35	PCN40853	6		6.01	units	100.2	98	102			
L12837-03DUP	DUP	06/22/13 19:00			U	U	units				0	20	
WG346203LCSW12	LCSW	06/22/13 20:13	PCN40853	6		6.05	units	100.8	98	102			
WG346203LCSW15	LCSW	06/22/13 23:44	PCN40853	6		6.05	units	100.8	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346628													
WG346628ICV	ICV	06/27/13 19:35	WI130620-3	.65228		.626	mg/L	96	90	110			
WG346628ICB	ICB	06/27/13 19:38				U	mg/L		-0.03	0.03			
WG346637													
WG346536LRB	LRB	06/27/13 23:52				U	mg/L		-0.03	0.03			
WG346536LFB	LFB	06/27/13 23:53	WI130620-1	.5		.487	mg/L	97.4	90	110			
L12674-01LFM	LFM	06/27/13 23:56	WI130620-1	.5	.03	.524	mg/L	98.8	90	110			
L12674-02DUP	DUP	06/27/13 23:58			.03	.024	mg/L				22.2	20	RA

SPF Water Engineering

ACZ Project ID: ***L12835***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	20		19.88	mg/L	99.4	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.9	0.9			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	99.97161		103.7	mg/L	103.7	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	99.97161	1.2	106.2	mg/L	105	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	99.97161	1.2	106	mg/L	104.8	85	115	0.19	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	20		20.15	mg/L	100.8	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.9	0.9			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.66	0.66			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	99.97161		100.5	mg/L	100.5	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	99.97161	9.2	109.1	mg/L	99.9	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	99.97161	9.2	109.6	mg/L	100.4	70	130	0.46	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346235													
WG346235PBW	PBW	06/24/13 10:45				U	mg/L		-15	15			
WG346235LCSW	LCSW	06/24/13 10:46	PCN42881	160		149	mg/L	93.1	80	120			
L12868-02DUP	DUP	06/24/13 11:00			6	6	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		1.97	mg/L	98.5	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.3	0.3			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	1.0009		1.08	mg/L	107.9	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	1.0009	U	1.09	mg/L	108.9	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	1.0009	U	1.09	mg/L	108.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2	mg/L	100	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.3	0.3			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.22	0.22			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1.0009		1.03	mg/L	102.9	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1.0009	U	1.02	mg/L	101.9	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1.0009	U	1.02	mg/L	101.9	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L12835***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05201	mg/L	104	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.05521	mg/L	110.3	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.06048	mg/L	120.8	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.06049	mg/L	120.9	70	130	0.02	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05122	mg/L	102.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04949	mg/L	98.9	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	U	.04782	mg/L	95.5	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	U	.04791	mg/L	95.7	70	130	0.19	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.02002		.02042	mg/L	102	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.00015	0.00015			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.01001		.009588	mg/L	95.8	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.01001	U	.009339	mg/L	93.3	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.01001	U	.009417	mg/L	94.1	70	130	0.83	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.02002		.02058	mg/L	102.8	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.00015	0.00015			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00011	0.00011			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.01001		.01	mg/L	99.9	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.01001	.00006	.009588	mg/L	95.2	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.01001	.00006	.009611	mg/L	95.4	70	130	0.24	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	100		99.19	mg/L	99.2	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.9	0.9			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	100.0416		104	mg/L	104	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	100.0416	193	295.8	mg/L	102.8	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	100.0416	193	293.9	mg/L	100.9	85	115	0.64	20	

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ACZ Project ID: ***L12835***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	100		100.7	mg/L	100.7	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.9	0.9			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.66	0.66			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	100.0416		99.91	mg/L	99.9	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	100.0416	3.1	102.3	mg/L	99.2	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	100.0416	3.1	102.9	mg/L	99.8	70	130	0.58	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		2.013	mg/L	100.7	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.03	0.03			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	.5		.527	mg/L	105.4	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	.5	.05	.575	mg/L	105	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	.5	.05	.575	mg/L	105	85	115	0	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		2.024	mg/L	101.2	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.03	0.03			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.022	0.022			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	.5		.493	mg/L	98.6	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	.5	.02	.514	mg/L	98.8	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	.5	.02	.517	mg/L	99.4	70	130	0.58	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05335	mg/L	106.7	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.05157	mg/L	103	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.05108	mg/L	102.1	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.05095	mg/L	101.8	70	130	0.25	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05171	mg/L	103.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04959	mg/L	99.1	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	U	.05005	mg/L	100	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	U	.04995	mg/L	99.8	70	130	0.2	20	

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ACZ Project ID: ***L12835***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05015		.05184	mg/L	103.4	90	110			
WG346624ICB	ICB	06/28/13 1:22				.00011	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05005		.04832	mg/L	96.5	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05005	U	.04628	mg/L	92.5	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05005	U	.0472	mg/L	94.3	70	130	1.97	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05015		.05238	mg/L	104.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05005		.04948	mg/L	98.9	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05005	U	.05147	mg/L	102.8	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05005	U	.05049	mg/L	100.9	70	130	1.92	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		1.978	mg/L	98.9	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.015	0.015			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	1		1.06	mg/L	106	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	1	U	1.07	mg/L	107	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	1	U	1.07	mg/L	107	85	115	0	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		1.9772	mg/L	98.9	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.015	0.015			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.011	0.011			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	1		1	mg/L	100	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	1	U	.99	mg/L	99	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	1	U	.9936	mg/L	99.4	70	130	0.36	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.05261	mg/L	105.2	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0003	0.0003			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.05		.05125	mg/L	102.5	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.05	U	.04995	mg/L	99.9	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.05	U	.0499	mg/L	99.8	70	130	0.1	20	

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ACZ Project ID: ***L12835***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.05122	mg/L	102.4	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0003	0.0003			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00022	0.00022			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.05		.0497	mg/L	99.4	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.05	.0024	.05268	mg/L	100.6	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.05	.0024	.05304	mg/L	101.3	70	130	0.68	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346624													
WG346624ICV	ICV	06/28/13 1:19	MS130416-2	.05		.04958	mg/L	99.2	90	110			
WG346624ICB	ICB	06/28/13 1:22				U	mg/L		-0.0006	0.0006			
WG346624LFB	LFB	06/28/13 1:26	MS130614-1	.0501		.05041	mg/L	100.6	85	115			
L12832-02AS	AS	06/28/13 2:14	MS130614-1	.0501	U	.04995	mg/L	99.7	70	130			
L12832-02ASD	ASD	06/28/13 2:17	MS130614-1	.0501	U	.04973	mg/L	99.3	70	130	0.44	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346820													
WG346820ICV	ICV	07/01/13 19:35	MS130416-2	.05		.04816	mg/L	96.3	90	110			
WG346820ICB	ICB	07/01/13 19:38				U	mg/L		-0.0006	0.0006			
WG346527LRB	LRB	07/01/13 19:41				U	mg/L		-0.00044	0.00044			
WG346527LFB	LFB	07/01/13 19:45	MS130614-1	.0501		.04963	mg/L	99.1	85	115			
L12861-01LFM	LFM	07/01/13 20:17	MS130614-1	.0501	.0006	.04877	mg/L	96.1	70	130			
L12861-01LFMD	LFMD	07/01/13 20:20	MS130614-1	.0501	.0006	.04911	mg/L	96.8	70	130	0.69	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346575													
WG346575ICV	ICV	06/28/13 21:49	II130510-1	2		1.983	mg/L	99.2	95	105			
WG346575ICB	ICB	06/28/13 21:55				U	mg/L		-0.03	0.03			
WG346575LFB	LFB	06/28/13 22:08	II130621-2	.5		.531	mg/L	106.2	85	115			
L12835-01AS	AS	06/28/13 22:17	II130621-2	.5	U	.546	mg/L	109.2	85	115			
L12835-01ASD	ASD	06/28/13 22:21	II130621-2	.5	U	.545	mg/L	109	85	115	0.18	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346549													
WG346549ICV	ICV	06/27/13 13:30	II130514-1	2		1.953	mg/L	97.7	95	105			
WG346549ICB	ICB	06/27/13 13:36				U	mg/L		-0.03	0.03			
WG346478LRB	LRB	06/27/13 13:48				U	mg/L		-0.022	0.022			
WG346478LFB	LFB	06/27/13 13:51	II130621-2	.5		.504	mg/L	100.8	85	115			
L12832-02LFM	LFM	06/27/13 14:40	II130621-2	.5	.05	.546	mg/L	99.2	70	130			
L12832-02LFMD	LFMD	06/27/13 14:43	II130621-2	.5	.05	.55	mg/L	100	70	130	0.73	20	

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-01	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346624	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346620	Mercury, dissolved	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-02	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346624	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346300	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-03	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12835***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-04	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346624	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346300	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12835***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-05	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346624	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346300	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12835***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12835-06	WG346549	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346624	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346300	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346691	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346687	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346805	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346637	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346235	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12835
Date Received: 06/20/2013 10:27
Received By: gac
Date Printed: 6/23/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3917	16.8	13	Yes
4004	17.7	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

L12835

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr Ste 350 Boise ID 83706
Company: SPF Water Engineering	
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [ ]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote SPF-2013-GW							
PW-4	6-17-13 11:20	GW	7	X							
GW-4	6-17-13 12:35	GW	7	X							
59766	6-17-13 14:25	GW	7	X							
GW-1	6-17-13 15:40	GW	7	X							
GW-1-D	6-17-13 15:45	GW	7	X							
PW-1	6-17-13 18:15	GW	7	X							
Trip/Field Blank	6-17-13 18:25	NA	1								

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

PW-4 GW-4 59766 Trip/Field Blank sent in separate cooler

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	6-17-13 22:00	[signature]	6-20-13 10:21

L12835 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 09, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12836

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 20, 2013. This project has been assigned to ACZ's project number, L12836. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12836. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 08, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: 59761

ACZ Sample ID: ***L12836-01***
Date Sampled: *06/18/13 10:15*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	14.2		*	mg/L	0.5	2.5	07/01/13 19:38	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.53		*	mg/L	0.1	0.5	07/02/13 16:56	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.17	H		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.17	H	*	mg/L	0.02	0.1	06/21/13 19:08	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/21/13 19:08	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	06/24/13 16:04	mss3
Sulfate	M300.0 - Ion Chromatography	1	28.0			mg/L	0.5	2.5	07/02/13 16:56	tcd

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L12836-02***
Date Sampled: *06/18/13 11:10*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	11.1		*	mg/L	0.5	2.5	07/01/13 19:56	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.49	B	*	mg/L	0.1	0.5	07/02/13 17:14	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.76	H		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.76	H	*	mg/L	0.02	0.1	06/21/13 19:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/21/13 19:09	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270			mg/L	10	20	06/24/13 16:05	mss3
Sulfate	M300.0 - Ion Chromatography	1	37.5			mg/L	0.5	2.5	07/02/13 17:14	tcd

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L12836-03***
Date Sampled: *06/18/13 12:55*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	9.84		*	mg/L	0.5	2.5	07/01/13 20:13	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.52		*	mg/L	0.1	0.5	07/02/13 17:31	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/21/13 19:11	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/21/13 19:11	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260			mg/L	10	20	06/25/13 14:45	khw
Sulfate	M300.0 - Ion Chromatography	1	30.7			mg/L	0.5	2.5	07/02/13 17:31	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: BLM

ACZ Sample ID: ***L12836-04***
Date Sampled: *06/18/13 14:00*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	23.4		*	mg/L	0.5	2.5	07/01/13 20:31	tcd
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	1	5	07/02/13 17:49	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/21/13 19:14	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/21/13 19:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1080			mg/L	10	20	06/25/13 14:46	khw
Sulfate	M300.0 - Ion Chromatography	10	541			mg/L	5	25	07/02/13 17:49	tcd

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L12836-05***
Date Sampled: *06/18/13 16:00*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	20.3		*	mg/L	0.5	2.5	07/01/13 20:48	tcd
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	1	5	07/02/13 18:06	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.09	BH		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.09	BH	*	mg/L	0.02	0.1	06/21/13 19:15	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/21/13 19:15	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1130			mg/L	10	20	06/25/13 14:48	khw
Sulfate	M300.0 - Ion Chromatography	10	568			mg/L	5	25	07/02/13 18:06	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L12836-06***
Date Sampled: *06/18/13 18:25*
Date Received: *06/20/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	7.45		*	mg/L	0.5	2.5	07/01/13 21:06	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.76		*	mg/L	0.1	0.5	07/02/13 18:24	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.00	H		mg/L	0.02	0.1	07/08/13 15:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.01	H	*	mg/L	0.02	0.1	06/21/13 19:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.01	BH	*	mg/L	0.01	0.05	06/21/13 19:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	240			mg/L	10	20	06/25/13 14:49	khw
Sulfate	M300.0 - Ion Chromatography	1	21.7			mg/L	0.5	2.5	07/02/13 18:24	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12836***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG346776													
WG346776LFB1	LFB	07/01/13 12:56	WI130501-1	30		31.4	mg/L	104.7	90	110			
L12832-04DUP	DUP	07/01/13 17:36			2.57	2.52	mg/L				2	20	RA
L12832-05AS	AS	07/01/13 18:11	WI130501-1	30	2.48	34	mg/L	105.1	90	110			
WG346776LFB2	LFB	07/01/13 21:23	WI130501-1	30		31.5	mg/L	105	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG346776													
WG346776LFB1	LFB	07/01/13 12:56	WI130501-1	1.5		1.58	mg/L	105.3	90	110			
L12832-04DUP	DUP	07/01/13 17:36			.42	.42	mg/L				0	20	RA
L12832-05AS	AS	07/01/13 18:11	WI130501-1	1.5	.3	1.95	mg/L	110	90	110			
WG346776LFB2	LFB	07/02/13 18:41	WI130501-1	1.5		1.57	mg/L	104.7	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346190													
WG346190ICV	ICV	06/21/13 18:58	WI130411-3	2.416		2.407	mg/L	99.6	90	110			
WG346190ICB	ICB	06/21/13 18:59				U	mg/L		-0.06	0.06			
WG346190LFB1	LFB	06/21/13 19:02	WI130215-3	2		1.967	mg/L	98.4	90	110			
L12809-01AS	AS	06/21/13 19:05	WI130215-3	2	U	1.962	mg/L	98.1	90	110			
L12809-02DUP	DUP	06/21/13 19:07			U	U	mg/L				0	20	RA
WG346190LFB2	LFB	06/21/13 19:36	WI130215-3	2		1.971	mg/L	98.6	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346190													
WG346190ICV	ICV	06/21/13 18:58	WI130411-3	.609		.6	mg/L	98.5	90	110			
WG346190ICB	ICB	06/21/13 18:59				U	mg/L		-0.03	0.03			
WG346190LFB1	LFB	06/21/13 19:02	WI130215-3	1		1.01	mg/L	101	90	110			
L12809-01AS	AS	06/21/13 19:05	WI130215-3	1	.01	1.012	mg/L	100.2	90	110			
L12809-02DUP	DUP	06/21/13 19:07			.02	.016	mg/L				22.2	20	RA
WG346190LFB2	LFB	06/21/13 19:36	WI130215-3	1		1.01	mg/L	101	90	110			

SPF Water Engineering

ACZ Project ID: ***L12836***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346285													
WG346285PBW	PBW	06/24/13 15:45				U	mg/L		-20	20			
WG346285LCSW	LCSW	06/24/13 15:46	PCN42881	260		238	mg/L	91.5	80	120			
L12913-05DUP	DUP	06/24/13 16:14			100	106	mg/L				5.8	10	
WG346379													
WG346379PBW	PBW	06/25/13 14:35				U	mg/L		-20	20			
WG346379LCSW	LCSW	06/25/13 14:36	PCN42882	260		242	mg/L	93.1	80	120			
L12777-01DUP	DUP	06/25/13 14:44			4830	4936	mg/L				2.2	10	
L12934-05DUP	DUP	06/25/13 14:59			1020	1006	mg/L				1.4	10	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG346776													
WG346776LFB1	LFB	07/01/13 12:56	WI130501-1	30		31.1	mg/L	103.7	90	110			
L12832-04DUP	DUP	07/01/13 17:36			23.7	23.6	mg/L				0.4	20	
L12832-05AS	AS	07/01/13 18:11	WI130501-1	30	15.7	46.7	mg/L	103.3	90	110			
WG346776LFB2	LFB	07/02/13 18:41	WI130501-1	30		30.7	mg/L	102.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L12836***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12836-01	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12836-02	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12836-03	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12836***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12836-04	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12836-05	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12836-06	WG346776	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346190	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L12836***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12836
Date Received: 06/20/2013 10:26
Received By: gac
Date Printed: 6/23/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
1124	1.2	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. 12836

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr Ste 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [ ]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHE

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote: short-holds-wetche
59761	6-18-13 10:15	GW	1	X
59772	6-18-13 11:10	GW	1	X
59760	6-18-13 12:55	GW	1	X
BLM	6-18-13 14:00	GW	1	X
59763	6-18-13 16:00	GW	1	X
Bishop	6-18-13 18:25	GW	1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	6-18-13 21:30	[illegible]	6/20/13 10:26

L12836 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 10, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12882

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 21, 2013. This project has been assigned to ACZ's project number, L12882. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12882. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 09, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: BLM

ACZ Sample ID: ***L12882-01***
Date Sampled: *06/18/13 14:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 10:47	mla
Cyanide, WAD	SM4500-CN I- distillation								06/30/13 20:08	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/29/13 14:18	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 16:57	las
Total Hot Plate Digestion	M200.2 ICP								06/28/13 10:50	jjc

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: BLM

ACZ Sample ID: ***L12882-01***
Date Sampled: *06/18/13 14:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 20:00	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	06/29/13 11:27	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 5:06	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 19:45	msh
Arsenic, dissolved	M200.8 ICP-MS	10	1.570			mg/L	0.002	0.01	07/03/13 1:17	pmc
Arsenic, total	M200.8 ICP-MS	10	1.630			mg/L	0.002	0.01	07/06/13 17:34	msh
Barium, dissolved	M200.7 ICP	1	0.040			mg/L	0.003	0.02	07/02/13 13:12	jjc
Barium, total	M200.7 ICP	1	0.034			mg/L	0.003	0.02	06/29/13 11:27	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:06	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/02/13 19:45	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:00	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/29/13 11:27	jjc
Boron, dissolved	M200.7 ICP	1	0.65			mg/L	0.01	0.05	07/01/13 20:00	jjc
Boron, total	M200.7 ICP	1	0.72			mg/L	0.01	0.05	06/29/13 11:27	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:06	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:45	msh
Calcium, dissolved	M200.7 ICP	1	66.8			mg/L	0.2	1	07/02/13 13:12	jjc
Calcium, total	M200.7 ICP	1	62.6			mg/L	0.2	1	06/29/13 11:27	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 5:06	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 19:45	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.02956			mg/L	0.00005	0.0003	07/02/13 5:06	pmc
Cobalt, total	M200.8 ICP-MS	1	0.02273			mg/L	0.00005	0.0003	07/02/13 19:45	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 5:06	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 19:45	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:00	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/29/13 11:27	jjc
Iron, dissolved	M200.7 ICP	1	54.60			mg/L	0.02	0.05	07/01/13 20:00	jjc
Iron, total	M200.7 ICP	1	47.60		*	mg/L	0.02	0.05	06/29/13 11:27	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:06	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:45	msh
Lithium, dissolved	M200.7 ICP	1	0.52			mg/L	0.02	0.1	07/02/13 13:12	jjc
Lithium, total	M200.7 ICP	1	0.52			mg/L	0.02	0.1	06/29/13 11:27	jjc
Magnesium, dissolved	M200.7 ICP	1	3.3			mg/L	0.2	1	07/02/13 13:12	jjc
Magnesium, total	M200.7 ICP	1	3.0			mg/L	0.2	1	06/29/13 11:27	jjc
Manganese, dissolved	M200.8 ICP-MS	10	0.532			mg/L	0.005	0.03	07/03/13 1:17	pmc
Manganese, total	M200.8 ICP-MS	10	0.480			mg/L	0.005	0.03	07/06/13 17:34	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.9			ng/L	0.2	0.5	06/28/13 11:26	las
Mercury, total	M1631, Atomic Fluorescence	2	1.8			ng/L	0.4	1	06/27/13 12:38	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	07/02/13 5:06	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/02/13 19:45	msh
Nickel, dissolved	M200.8 ICP-MS	1	0.0160			mg/L	0.0006	0.003	07/02/13 5:06	pmc
Nickel, total	M200.8 ICP-MS	1	0.0128			mg/L	0.0006	0.003	07/02/13 19:45	msh
Potassium, dissolved	M200.7 ICP	1	3.6			mg/L	0.3	2	07/01/13 20:00	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: BLM

ACZ Sample ID: ***L12882-01***
Date Sampled: *06/18/13 14:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	3.7			mg/L	0.3	2	06/29/13 11:27	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:00	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/29/13 11:27	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/02/13 5:06	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/02/13 19:45	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:06	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 19:45	msh
Sodium, dissolved	M200.7 ICP	1	251			mg/L	0.3	2	07/02/13 13:12	jjc
Sodium, total	M200.7 ICP	1	255			mg/L	0.3	2	06/29/13 11:27	jjc
Strontium, dissolved	M200.7 ICP	1	1.51			mg/L	0.01	0.05	07/01/13 20:00	jjc
Strontium, total	M200.7 ICP	1	1.42			mg/L	0.01	0.05	06/29/13 11:27	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:06	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:45	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 5:06	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 19:45	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:00	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	06/29/13 11:27	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/02/13 5:06	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/02/13 19:45	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/02/13 5:06	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/02/13 19:45	msh
Zinc, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/01/13 20:00	jjc
Zinc, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	06/29/13 11:27	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	169		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	169		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	1410		*	umhos/cm	1	10	06/22/13 22:32	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 13:52	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:35	mpb
Hardness as CaCO3	SM2340B - Calculation		181			mg/L	1	7	07/10/13 12:34	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.51		*	mg/L	0.05	0.5	07/01/13 19:02	mpb
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	23.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.29		*	mg/L	0.01	0.05	07/02/13 12:02	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1	78		*	mg/L	5	20	06/25/13 16:49	dcw

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L12882-02***
Date Sampled: *06/18/13 16:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 10:55	mla
Cyanide, WAD	SM4500-CN I- distillation								06/30/13 21:06	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/29/13 14:24	bsu
Total Hot Plate Digestion	M200.2 ICP								06/28/13 11:25	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 17:09	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L12882-02***
Date Sampled: *06/18/13 16:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 20:03	jjc
Aluminum, total	M200.7 ICP	1	0.10	B		mg/L	0.03	0.2	06/29/13 11:43	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/02/13 5:09	pmc
Antimony, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	07/02/13 19:48	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0609			mg/L	0.0002	0.001	07/02/13 5:09	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0606		*	mg/L	0.0002	0.001	07/02/13 19:48	msh
Barium, dissolved	M200.7 ICP	1	0.029			mg/L	0.003	0.02	07/02/13 13:21	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	06/29/13 11:43	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:09	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/02/13 19:48	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:03	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/29/13 11:43	jjc
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/01/13 20:03	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	06/29/13 11:43	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:09	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:48	msh
Calcium, dissolved	M200.7 ICP	1	49.6			mg/L	0.2	1	07/02/13 13:21	jjc
Calcium, total	M200.7 ICP	1	53.2			mg/L	0.2	1	06/29/13 11:43	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 5:09	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 19:48	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00052			mg/L	0.00005	0.0003	07/02/13 5:09	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00056			mg/L	0.00005	0.0003	07/02/13 19:48	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	07/02/13 5:09	pmc
Copper, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	07/02/13 19:48	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:03	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/29/13 11:43	jjc
Iron, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.02	0.05	07/01/13 20:03	jjc
Iron, total	M200.7 ICP	1	0.15		*	mg/L	0.02	0.05	06/29/13 11:43	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:09	pmc
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	07/02/13 19:48	msh
Lithium, dissolved	M200.7 ICP	1	0.19			mg/L	0.02	0.1	07/02/13 13:21	jjc
Lithium, total	M200.7 ICP	1	0.20			mg/L	0.02	0.1	06/29/13 11:43	jjc
Magnesium, dissolved	M200.7 ICP	1	5.2			mg/L	0.2	1	07/02/13 13:21	jjc
Magnesium, total	M200.7 ICP	1	5.4			mg/L	0.2	1	06/29/13 11:43	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.1974			mg/L	0.0005	0.003	07/02/13 5:09	pmc
Manganese, total	M200.8 ICP-MS	2	0.205			mg/L	0.001	0.005	07/06/13 17:37	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	06/28/13 11:33	las
Mercury, total	M1631, Atomic Fluorescence	2	2.3			ng/L	0.4	1	06/27/13 12:45	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0126			mg/L	0.0005	0.003	07/02/13 5:09	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0120			mg/L	0.0005	0.003	07/02/13 19:48	msh
Nickel, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0006	0.003	07/02/13 5:09	pmc
Nickel, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0006	0.003	07/02/13 19:48	msh
Potassium, dissolved	M200.7 ICP	1	24.3			mg/L	0.3	2	07/01/13 20:03	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L12882-02***
Date Sampled: *06/18/13 16:00*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	27.5			mg/L	0.3	2	06/29/13 11:43	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:03	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/29/13 11:43	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/02/13 5:09	pmc
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	07/02/13 19:48	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:09	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 19:48	msh
Sodium, dissolved	M200.7 ICP	1	287			mg/L	0.3	2	07/02/13 13:21	jjc
Sodium, total	M200.7 ICP	1	305			mg/L	0.3	2	06/29/13 11:43	jjc
Strontium, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/01/13 20:03	jjc
Strontium, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	06/29/13 11:43	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:09	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:48	msh
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/02/13 5:09	pmc
Tin, total	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	07/02/13 19:48	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:03	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	06/29/13 11:43	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	07/02/13 5:09	pmc
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	07/02/13 19:48	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0002	0.001	07/02/13 5:09	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0002	0.001	07/02/13 19:48	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/13 20:03	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	06/29/13 11:43	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	185		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	11	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	196		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	1690		*	umhos/cm	1	10	06/22/13 22:42	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 13:53	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:38	mpb
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	1	7	07/10/13 12:34	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 19:03	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	24.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/02/13 12:03	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/25/13 16:51	dcw

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L12882-03***
Date Sampled: *06/18/13 18:25*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 11:11	mla
Cyanide, WAD	SM4500-CN I- distillation		-						06/30/13 22:03	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/29/13 14:30	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 17:21	las
Total Hot Plate Digestion	M200.2 ICP								07/01/13 14:33	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L12882-03***
Date Sampled: *06/18/13 18:25*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 20:06	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/13 21:39	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 5:12	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 19:52	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0002	0.001	07/02/13 5:12	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0002	0.001	07/06/13 17:40	msh
Barium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.003	0.02	07/02/13 13:24	jjc
Barium, total	M200.7 ICP	1	0.013	B		mg/L	0.003	0.02	07/03/13 11:34	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:12	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/02/13 19:52	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:06	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 16:14	aeb
Boron, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	07/01/13 20:06	jjc
Boron, total	M200.7 ICP	1	0.22			mg/L	0.01	0.05	07/03/13 11:34	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:12	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:52	msh
Calcium, dissolved	M200.7 ICP	1	3.0			mg/L	0.2	1	07/02/13 13:24	jjc
Calcium, total	M200.7 ICP	1	2.8			mg/L	0.2	1	07/02/13 21:39	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 5:12	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/13 19:52	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00018	B		mg/L	0.00005	0.0003	07/02/13 5:12	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	07/02/13 19:52	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 5:12	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 19:52	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:06	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:39	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 20:06	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/13 21:39	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/02/13 5:12	pmc
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/02/13 19:52	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/02/13 13:24	jjc
Lithium, total	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	07/02/13 21:39	aeb
Magnesium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	07/02/13 13:24	jjc
Magnesium, total	M200.7 ICP	1	0.5	B		mg/L	0.2	1	07/02/13 21:39	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0067			mg/L	0.0005	0.003	07/02/13 5:12	pmc
Manganese, total	M200.8 ICP-MS	1	0.0069			mg/L	0.0005	0.003	07/02/13 19:52	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	06/28/13 11:39	las
Mercury, total	M1631, Atomic Fluorescence	2	1.0			ng/L	0.4	1	06/27/13 12:51	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0097			mg/L	0.0005	0.003	07/02/13 5:12	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0092			mg/L	0.0005	0.003	07/02/13 19:52	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 5:12	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 19:52	msh
Potassium, dissolved	M200.7 ICP	1	3.9			mg/L	0.3	2	07/01/13 20:06	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L12882-03***
Date Sampled: *06/18/13 18:25*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	07/02/13 21:39	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:06	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:39	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/02/13 5:12	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/02/13 19:52	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:12	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 19:52	msh
Sodium, dissolved	M200.7 ICP	1	80.8			mg/L	0.3	2	07/02/13 13:24	jjc
Sodium, total	M200.7 ICP	1	83.7			mg/L	0.3	2	07/02/13 21:39	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	07/01/13 20:06	jjc
Strontium, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	07/02/13 21:39	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:12	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 19:52	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 5:12	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 19:52	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:06	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/13 21:39	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/02/13 5:12	pmc
Uranium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/02/13 19:52	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0002	0.001	07/02/13 5:12	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0026			mg/L	0.0002	0.001	07/02/13 19:52	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/13 20:06	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/02/13 21:39	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	145		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	14	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	159		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	386		*	umhos/cm	1	10	06/22/13 22:51	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 13:54	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:39	mpb
Hardness as CaCO3	SM2340B - Calculation		10			mg/L	1	7	07/10/13 12:35	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.08	B	*	mg/L	0.05	0.5	07/01/13 19:04	mpb
pH (lab)	SM4500H+ B									
pH		1	8.7	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	24.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.13		*	mg/L	0.01	0.05	07/02/13 12:04	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/25/13 16:52	dcw

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12882***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203PBW1	PBW	06/22/13 10:56				16.2	mg/L		-20	20			
WG346203LCSW2	LCSW	06/22/13 11:08	WC130613-	820.0001		752.5	mg/L	91.8	90	110			
WG346203LCSW5	LCSW	06/22/13 13:44	WC130613-	820.0001		783.1	mg/L	95.5	90	110			
WG346203PBW2	PBW	06/22/13 13:52				2.5	mg/L		-20	20			
WG346203LCSW8	LCSW	06/22/13 17:32	WC130613-	820.0001		787.9	mg/L	96.1	90	110			
WG346203PBW3	PBW	06/22/13 17:41				3.8	mg/L		-20	20			
WG346203LCSW11	LCSW	06/22/13 20:10	WC130613-	820.0001		770.5	mg/L	94	90	110			
WG346203PBW4	PBW	06/22/13 20:18				2.8	mg/L		-20	20			
L12883-03DUP	DUP	06/22/13 23:28			141	141.9	mg/L				0.6	20	
WG346203LCSW14	LCSW	06/22/13 23:40	WC130613-	820.0001		776.6	mg/L	94.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.027	mg/L	101.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.09	0.09			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1.0011		1.024	mg/L	102.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1.0011	U	.978	mg/L	97.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1.0011	U	.99	mg/L	98.9	85	115	1.22	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.964	mg/L	98.2	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.09	0.09			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.066	0.066			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1.0011		1.023	mg/L	102.2	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1.0011	U	1.054	mg/L	105.3	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1.0011	U	1.034	mg/L	103.3	70	130	1.92	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.004	mg/L	100.2	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.09	0.09			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.066	0.066			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1.0011		1.022	mg/L	102.1	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1.0011	U	1.017	mg/L	101.6	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1.0011	U	1.016	mg/L	101.5	70	130	0.1	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02		.02059	mg/L	103	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0012	0.0012			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.01		.01004	mg/L	100.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.01	U	.00972	mg/L	97.2	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.01	U	.00989	mg/L	98.9	70	130	1.73	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02		.02082	mg/L	104.1	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0012	0.0012			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00088	0.00088			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.01		.0114	mg/L	114	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.01	.0006	.01154	mg/L	109.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.01	.0006	.01171	mg/L	111.1	70	130	1.46	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05327	mg/L	106.5	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0006	0.0006			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05202	mg/L	103.9	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05512	mg/L	110.1	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.0546	mg/L	109.1	70	130	0.95	20	
WG346922													
WG346922ICV	ICV	07/03/13 1:05	MS130416-2	.05		.05334	mg/L	106.7	90	110			
WG346922ICB	ICB	07/03/13 1:08				U	mg/L		-0.0006	0.0006			
WG346922LFB	LFB	07/03/13 1:11	MS130614-1	.05005		.0487	mg/L	97.3	85	115			
L12897-01AS	AS	07/03/13 1:24	MS130614-1	.05005	.0002	.05146	mg/L	102.4	70	130			
L12897-01ASD	ASD	07/03/13 1:27	MS130614-1	.05005	.0002	.05212	mg/L	103.7	70	130	1.27	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05099	mg/L	102	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0006	0.0006			
WG346580LRB	LRB	07/02/13 18:44				.00054	mg/L		-0.00044	0.00044			B7
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.05502	mg/L	109.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0268	.07726	mg/L	100.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0268	.07837	mg/L	103	70	130	1.43	20	
WG347093													
WG347093ICV	ICV	07/06/13 17:07	MS130416-2	.05		.05405	mg/L	108.1	90	110			
WG347093ICB	ICB	07/06/13 17:10				U	mg/L		-0.0006	0.0006			
WG346580LRB	LRB	07/06/13 17:13				.00023	mg/L		-0.00044	0.00044			
WG346580LFB	LFB	07/06/13 17:17	MS130614-1	.05005		.05586	mg/L	111.6	85	115			
L12883-03LFM	LFM	07/06/13 17:54	MS130614-1	.05005	.0264	.07646	mg/L	100	70	130			
L12883-03LFMD	LFMD	07/06/13 17:57	MS130614-1	.05005	.0264	.0756	mg/L	98.3	70	130	1.13	20	
WG346758LRB	LRB	07/06/13 18:07				.00033	mg/L		-0.00044	0.00044			
WG346758LFB	LFB	07/06/13 18:11	MS130614-1	.05005		.05515	mg/L	110.2	85	115			

SPF Water Engineering

ACZ Project ID: ***L12882***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	2		1.9692	mg/L	98.5	95	105			
WG346850ICB	ICB	07/02/13 12:32				.0041	mg/L		-0.009	0.009			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	.5		.4893	mg/L	97.9	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	.5	.007	.4856	mg/L	95.7	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	.5	.007	.4865	mg/L	95.9	85	115	0.19	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	.5	.017	.505	mg/L	97.6	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	.5	.017	.5098	mg/L	98.6	85	115	0.95	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.9588	mg/L	97.9	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.009	0.009			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.0066	0.0066			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	.5		.5004	mg/L	100.1	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	.5	.034	.553	mg/L	103.8	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	.5	.034	.542	mg/L	101.6	70	130	2.01	20	
WG346936													
WG346936ICV	ICV	07/03/13 11:11	II130514-1	2		1.99	mg/L	99.5	95	105			
WG346936ICB	ICB	07/03/13 11:15				U	mg/L		-0.009	0.009			
WG346791LRB	LRB	07/03/13 11:27				U	mg/L		-0.0066	0.0066			
WG346791LFB	LFB	07/03/13 11:31	II130621-2	.5		.4986	mg/L	99.7	85	115			
L12883-02LFM	LFM	07/03/13 11:43	II130621-2	.5	.028	.5229	mg/L	99	70	130			
L12883-02LFMD	LFMD	07/03/13 11:46	II130621-2	.5	.028	.5221	mg/L	98.8	70	130	0.15	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.04866	mg/L	97.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.05072	mg/L	101.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	.00037	.05573	mg/L	110.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	.00037	.05567	mg/L	110.4	70	130	0.11	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04732	mg/L	94.6	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.05085	mg/L	101.5	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	U	.04452	mg/L	88.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	U	.04493	mg/L	89.7	70	130	0.92	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.982	mg/L	99.1	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.12	0.12			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.964	mg/L	96.4	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.007	mg/L	100.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	.996	mg/L	99.6	85	115	1.1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.983	mg/L	99.2	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.12	0.12			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.088	0.088			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1		1.022	mg/L	102.2	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1	U	1.048	mg/L	104.8	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1	U	1.045	mg/L	104.5	70	130	0.29	20	
WG346976													
WG346976ICV	ICV	07/03/13 15:50	II130514-1	2		2.011	mg/L	100.6	95	105			
WG346976ICB	ICB	07/03/13 15:56				U	mg/L		-0.12	0.12			
WG346791LRB	LRB	07/03/13 16:08				U	mg/L		-0.088	0.088			
WG346791LFB	LFB	07/03/13 16:11	II130621-2	1		1.012	mg/L	101.2	85	115			
L12883-02LFM	LFM	07/03/13 16:23	II130621-2	1	U	.987	mg/L	98.7	70	130			
L12883-02LFMD	LFMD	07/03/13 16:27	II130621-2	1	U	.989	mg/L	98.9	70	130	0.2	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.008	mg/L	100.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5005		.489	mg/L	97.7	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5005	.2	.699	mg/L	99.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5005	.2	.711	mg/L	102.1	85	115	1.7	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		2.046	mg/L	102.3	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.03	0.03			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.022	0.022			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	.5005		.53	mg/L	105.9	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	.5005	.72	1.27	mg/L	109.9	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	.5005	.72	1.257	mg/L	107.3	70	130	1.03	20	
WG346936													
WG346936ICV	ICV	07/03/13 11:11	II130514-1	2		1.999	mg/L	100	95	105			
WG346936ICB	ICB	07/03/13 11:15				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/03/13 11:27				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/03/13 11:31	II130621-2	.5005		.514	mg/L	102.7	85	115			
L12883-02LFM	LFM	07/03/13 11:43	II130621-2	.5005	.07	.575	mg/L	100.9	70	130			
L12883-02LFMD	LFMD	07/03/13 11:46	II130621-2	.5005	.07	.574	mg/L	100.7	70	130	0.17	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05229	mg/L	104.6	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.0532	mg/L	106.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	.0001	.05497	mg/L	109.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	.0001	.05443	mg/L	108.4	70	130	0.99	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05042	mg/L	100.8	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.05114	mg/L	102.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	U	.04755	mg/L	94.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	U	.04828	mg/L	96.4	70	130	1.52	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		97.82	mg/L	97.8	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.6	0.6			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	67.95918		69.65	mg/L	102.5	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	67.95918	9	76.15	mg/L	98.8	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	67.95918	9	76.51	mg/L	99.3	85	115	0.47	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	67.95918	3	71.89	mg/L	101.4	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	67.95918	3	71.86	mg/L	101.3	85	115	0.04	20	

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ACZ Project ID: ***L12882***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	100		97.63	mg/L	97.6	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.6	0.6			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.44	0.44			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	67.95918		71.19	mg/L	104.8	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	67.95918	62.6	137.1	mg/L	109.6	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	67.95918	62.6	135.1	mg/L	106.7	70	130	1.47	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		98.44	mg/L	98.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.6	0.6			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.44	0.44			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	67.95918		69.16	mg/L	101.8	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	67.95918	39.7	107.6	mg/L	99.9	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	67.95918	39.7	106.8	mg/L	98.7	70	130	0.75	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05036	mg/L	100.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05317	mg/L	106.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05149	mg/L	102.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05151	mg/L	102.9	70	130	0.04	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04893	mg/L	97.9	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04834	mg/L	96.6	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.001	.0487	mg/L	95.3	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.001	.05272	mg/L	103.3	70	130	7.93	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05012	mg/L	100.2	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05225	mg/L	104.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.01041	.06271	mg/L	104.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.01041	.06269	mg/L	104.5	70	130	0.03	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04961	mg/L	99.2	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04912	mg/L	98.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.00013	.04873	mg/L	97.1	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.00013	.04953	mg/L	98.7	70	130	1.63	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW1	LCSW	06/22/13 10:57	PCN41764	1408.8		1454.1	umhos/cm	103.2	90	110			
WG346203LCSW4	LCSW	06/22/13 13:32	PCN41764	1408.8		1422.2	umhos/cm	101	90	110			
WG346203LCSW7	LCSW	06/22/13 17:21	PCN41764	1408.8		1400.7	umhos/cm	99.4	90	110			
WG346203LCSW10	LCSW	06/22/13 19:59	PCN41764	1408.8		1378.1	umhos/cm	97.8	90	110			
L12883-03DUP	DUP	06/22/13 23:28			379	380	umhos/cm				0.3	20	
WG346203LCSW13	LCSW	06/22/13 23:29	PCN41764	1408.8		1350.3	umhos/cm	95.8	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05204	mg/L	104.1	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05343	mg/L	106.8	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.0007	.05326	mg/L	105	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.0007	.0532	mg/L	104.9	70	130	0.11	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04968	mg/L	99.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04916	mg/L	98.2	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0131	.05876	mg/L	91.2	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0131	.06039	mg/L	94.5	70	130	2.74	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346723LRB	LRB	07/02/13 13:39				U	mg/L		-0.003	0.003			
WG346723LFB	LFB	07/02/13 13:39	WI130621-2	.2		.2041	mg/L	102.1	90	110			
L12868-04DUP	DUP	07/02/13 13:41			U	U	mg/L				0	20	RA
L12869-01LFM	LFM	07/02/13 13:43	WI130621-2	.2	U	.1782	mg/L	89.1	90	110			M2
L12882-02DUP	DUP	07/02/13 13:53			U	U	mg/L				0	20	RA
L12882-03LFM	LFM	07/02/13 13:55	WI130621-2	.2	U	.1895	mg/L	94.8	90	110			

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ACZ Project ID: ***L12882***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346875													
WG346738LRB	LRB	07/02/13 14:27				U	mg/L		-0.003	0.003			
WG346738LFB	LFB	07/02/13 14:28	WI130621-4	.2		.1873	mg/L	93.7	90	110			
L12870-01DUP	DUP	07/02/13 14:30			U	U	mg/L				0	20	RA
L12870-02LFM	LFM	07/02/13 14:32	WI130621-4	.2	U	.1886	mg/L	94.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.05	mg/L	102.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.3	0.3			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.99	mg/L	99	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	.99	mg/L	99	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.03	mg/L	103	85	115	3.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		2	mg/L	100	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.3	0.3			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.22	0.22			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1		1.01	mg/L	101	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1	U	1.09	mg/L	109	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1	U	1.05	mg/L	105	70	130	3.74	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.03	mg/L	101.5	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.3	0.3			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.22	0.22			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		1.01	mg/L	101	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	1	mg/L	100	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	1	mg/L	100	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.98	mg/L	99	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.06	0.06			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.983	mg/L	98.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.059	mg/L	105.9	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.06	mg/L	106	85	115	0.09	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.971	mg/L	98.6	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.06	0.06			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.044	0.044			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1		1.036	mg/L	103.6	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1	47.6	48.79	mg/L	119	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1	47.6	48.27	mg/L	67	70	130	1.07	20	M3
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.995	mg/L	99.8	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.06	0.06			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.044	0.044			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		1.025	mg/L	102.5	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	1.012	mg/L	101.2	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	1.004	mg/L	100.4	70	130	0.79	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05287	mg/L	105.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05253	mg/L	105	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05216	mg/L	104.2	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05179	mg/L	103.5	70	130	0.71	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05033	mg/L	100.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04692	mg/L	93.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0002	.04755	mg/L	94.6	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0002	.04783	mg/L	95.2	70	130	0.59	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	2		1.991	mg/L	99.6	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.06	0.06			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	1		.977	mg/L	97.7	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	1	.1	1.043	mg/L	94.3	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	1	.1	1.049	mg/L	94.9	85	115	0.57	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	1	U	.992	mg/L	99.2	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	1	U	.996	mg/L	99.6	85	115	0.4	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.98	mg/L	99	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.06	0.06			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.044	0.044			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1		.996	mg/L	99.6	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1	.52	1.555	mg/L	103.5	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1	.52	1.53	mg/L	101	70	130	1.62	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.984	mg/L	99.2	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.06	0.06			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.044	0.044			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		.972	mg/L	97.2	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	.05	1.013	mg/L	96.3	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	.05	1.011	mg/L	96.1	70	130	0.2	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		97.23	mg/L	97.2	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.6	0.6			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	49.99941		49.23	mg/L	98.5	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	49.99941	.6	48.05	mg/L	94.9	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	49.99941	.6	48.24	mg/L	95.3	85	115	0.39	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	49.99941	.7	48.96	mg/L	96.5	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	49.99941	.7	49.38	mg/L	97.4	85	115	0.85	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	100		97.92	mg/L	97.9	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.6	0.6			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.44	0.44			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	49.99941		50.74	mg/L	101.5	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	49.99941	3	55.32	mg/L	104.6	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	49.99941	3	54.3	mg/L	102.6	70	130	1.86	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		98.69	mg/L	98.7	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.6	0.6			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.44	0.44			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	49.99941		49.51	mg/L	99	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	49.99941	7.2	56.26	mg/L	98.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	49.99941	7.2	55.81	mg/L	97.2	70	130	0.8	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05153	mg/L	103.1	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05516	mg/L	110.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.2856	.3356	mg/L	99.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.2856	.3367	mg/L	102.1	70	130	0.33	20	
WG346922													
WG346922ICV	ICV	07/03/13 1:05	MS130416-2	.05		.05283	mg/L	105.7	90	110			
WG346922ICB	ICB	07/03/13 1:08				U	mg/L		-0.0015	0.0015			
WG346922LFB	LFB	07/03/13 1:11	MS130614-1	.05005		.0497	mg/L	99.3	85	115			
L12897-01AS	AS	07/03/13 1:24	MS130614-1	.05005	.0059	.05481	mg/L	97.7	70	130			
L12897-01ASD	ASD	07/03/13 1:27	MS130614-1	.05005	.0059	.05603	mg/L	100.2	70	130	2.2	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05058	mg/L	101.2	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04988	mg/L	99.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0011	.0526	mg/L	102.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0011	.05316	mg/L	104	70	130	1.06	20	
WG347093													
WG347093ICV	ICV	07/06/13 17:07	MS130416-2	.05		.04797	mg/L	95.9	90	110			
WG347093ICB	ICB	07/06/13 17:10				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/06/13 17:13				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/06/13 17:17	MS130614-1	.05005		.04833	mg/L	96.6	85	115			
L12883-03LFM	LFM	07/06/13 17:54	MS130614-1	.05005	.0011	.04772	mg/L	93.1	70	130			
L12883-03LFMD	LFMD	07/06/13 17:57	MS130614-1	.05005	.0011	.04806	mg/L	93.8	70	130	0.71	20	
WG346758LRB	LRB	07/06/13 18:07				U	mg/L		-0.0011	0.0011			
WG346758LFB	LFB	07/06/13 18:11	MS130614-1	.05005		.04802	mg/L	95.9	85	115			

SPF Water Engineering

ACZ Project ID: ***L12882***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346620													
WG346620CCV1	CCV	06/28/13 8:59	HG130517-4	10		11	ng/L	110	76.5	123.4			
WG346620CCB1	CCB	06/28/13 9:06				U	ng/L		-0.5	0.5			
WG346620PQV	PQV	06/28/13 9:12	HG130517-6	.5		.61	ng/L	122	70	130			
WG346620LFB	LFB	06/28/13 9:19	HG130517-5	2		2.36	ng/L	118	71	125			
WG346620CCV2	CCV	06/28/13 10:19	HG130517-4	10		11.35	ng/L	113.5	76.5	123.4			
WG346620CCB2	CCB	06/28/13 10:26				U	ng/L		-0.5	0.5			
WG346620CCV3	CCV	06/28/13 11:13	HG130517-4	10		11.14	ng/L	111.4	76.5	123.4			
WG346620CCB3	CCB	06/28/13 11:19				U	ng/L		-0.5	0.5			
WG346620CCV4	CCV	06/28/13 12:06	HG130517-4	10		10.56	ng/L	105.6	76.5	123.4			
WG346620CCB4	CCB	06/28/13 12:13				U	ng/L		-0.5	0.5			
L12937-04MS	MS	06/28/13 12:46	HG130517-5	2	.6	2.54	ng/L	97	71	125			
L12937-04MSD	MSD	06/28/13 12:53	HG130517-5	2	.6	3.01	ng/L	120.5	71	125	16.94	24	
WG346620CCV5	CCV	06/28/13 12:59	HG130517-4	10		10.14	ng/L	101.4	76.5	123.4			
WG346620CCB5	CCB	06/28/13 13:06				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346538													
WG346538CCV1	CCV	06/27/13 9:30	HG130517-4	10		10.47	ng/L	104.7	76.5	123.4			
WG346538CCB1	CCB	06/27/13 9:37				U	ng/L		-0.5	0.5			
WG346538PQV	PQV	06/27/13 9:44	HG130517-6	.5		.53	ng/L	106	70	130			
WG346538LFB	LFB	06/27/13 9:50	HG130517-5	2		1.87	ng/L	93.5	71	125			
WG346538CCV2	CCV	06/27/13 11:12	HG130517-4	10		10.55	ng/L	105.5	76.5	123.4			
WG346538CCB2	CCB	06/27/13 11:18				U	ng/L		-0.5	0.5			
WG346538CCV3	CCV	06/27/13 11:58	HG130517-4	10		10.8	ng/L	108	76.5	123.4			
WG346538CCB3	CCB	06/27/13 12:05				U	ng/L		-0.5	0.5			
WG346538CCV4	CCV	06/27/13 12:58	HG130517-4	10		8.96	ng/L	89.6	76.5	123.4			
WG346538CCB4	CCB	06/27/13 13:05				U	ng/L		-0.5	0.5			
L12845-01MS	MS	06/27/13 13:39	HG20XPRE	800	20	57.6	ng/L	94	71	125			
L12845-01MSD	MSD	06/27/13 13:46	HG20XPRE	800	20	56.9	ng/L	92.3	71	125	1.22	24	
WG346538CCV5	CCV	06/27/13 14:06	HG130517-4	10		9.59	ng/L	95.9	76.5	123.4			
WG346538CCB5	CCB	06/27/13 14:12				.21	ng/L		-0.5	0.5			
WG346538CCV6	CCV	06/27/13 14:52	HG130517-4	10		9.22	ng/L	92.2	76.5	123.4			
WG346538CCB6	CCB	06/27/13 14:59				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L12882***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02006		.01991	mg/L	99.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05		.05151	mg/L	103	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05	U	.05069	mg/L	101.4	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05	U	.05096	mg/L	101.9	70	130	0.53	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02006		.019	mg/L	94.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05		.04656	mg/L	93.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05	.0031	.05101	mg/L	95.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05	.0031	.05187	mg/L	97.5	70	130	1.67	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05275	mg/L	105.5	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0018	0.0018			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05356	mg/L	107	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.01	.0623	mg/L	104.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.01	.06211	mg/L	104.1	70	130	0.31	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04986	mg/L	99.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0018	0.0018			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00132	0.00132			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04869	mg/L	97.3	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.04699	mg/L	93.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.0479	mg/L	95.7	70	130	1.92	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346785													
WG346785ICV	ICV	07/01/13 13:42	WI121105-5	1.003		1	mg/L	99.7	90	110			
WG346785ICB	ICB	07/01/13 13:45				U	mg/L		-0.15	0.15			
WG346818													
WG346818LFB1	LFB	07/01/13 18:36	WI121218-3	1		1.059	mg/L	105.9	90	110			
L12881-05AS	AS	07/01/13 18:53	WI121218-3	1	U	1.09	mg/L	109	90	110			
L12881-06DUP	DUP	07/01/13 18:55			U	U	mg/L				0	20	RA
WG346818LFB2	LFB	07/01/13 19:07	WI121218-3	1		1.099	mg/L	109.9	90	110			

SPF Water Engineering

ACZ Project ID: ***L12882***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW3	LCSW	06/22/13 11:12	PCN40853	6		6	units	100	98	102			
WG346203LCSW6	LCSW	06/22/13 13:47	PCN40853	6		6.01	units	100.2	98	102			
WG346203LCSW9	LCSW	06/22/13 17:35	PCN40853	6		6.01	units	100.2	98	102			
WG346203LCSW12	LCSW	06/22/13 20:13	PCN40853	6		6.05	units	100.8	98	102			
L12883-03DUP	DUP	06/22/13 23:28			8.4	8.43	units				0.4	20	
WG346203LCSW15	LCSW	06/22/13 23:44	PCN40853	6		6.05	units	100.8	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346848													
WG346848ICV	ICV	07/02/13 10:44	WI130520-5	.65228		.641	mg/L	98.3	90	110			
WG346848ICB	ICB	07/02/13 10:45				U	mg/L		-0.03	0.03			
WG346854													
WG346725LRB	LRB	07/02/13 11:32				U	mg/L		-0.03	0.03			
WG346725LFB	LFB	07/02/13 11:33	WI130620-1	.5		.478	mg/L	95.6	90	110			
L12881-03LFM	LFM	07/02/13 11:51	WI130620-1	.5	.01	.475	mg/L	93	90	110			
L12881-04DUP	DUP	07/02/13 11:53			.01	.011	mg/L				9.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	20		20.09	mg/L	100.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.9	0.9			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	99.97161		98.59	mg/L	98.6	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	99.97161	3.9	97.23	mg/L	93.4	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	99.97161	3.9	97.7	mg/L	93.8	85	115	0.48	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	20		19.84	mg/L	99.2	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.9	0.9			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.66	0.66			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	99.97161		101	mg/L	101	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	99.97161	3.7	107.5	mg/L	103.8	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	99.97161	3.7	105.4	mg/L	101.7	70	130	1.97	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	20		20	mg/L	100	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.9	0.9			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.66	0.66			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	99.97161		98.62	mg/L	98.6	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	99.97161	6.1	104.5	mg/L	98.4	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	99.97161	6.1	104.1	mg/L	98	70	130	0.38	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346398													
WG346398PBW	PBW	06/25/13 16:20				U	mg/L		-6	6			
WG346398LCSW	LCSW	06/25/13 16:21	PCN42882	160		147	mg/L	91.9	80	120			
L12883-03DUP	DUP	06/25/13 16:59			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.97	mg/L	98.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.3	0.3			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1.0009		.98	mg/L	97.9	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1.0009	U	.98	mg/L	97.9	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1.0009	U	.99	mg/L	98.9	85	115	1.02	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.94	mg/L	97	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.3	0.3			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.22	0.22			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1.0009		1.03	mg/L	102.9	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1.0009	U	1.06	mg/L	105.9	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1.0009	U	1.04	mg/L	103.9	70	130	1.9	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.94	mg/L	97	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.3	0.3			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.22	0.22			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1.0009		1	mg/L	99.9	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1.0009	U	1	mg/L	99.9	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1.0009	U	.99	mg/L	98.9	70	130	1.01	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05197	mg/L	103.9	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05444	mg/L	108.8	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.0569	mg/L	113.7	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05637	mg/L	112.6	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.0517	mg/L	103.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.0542	mg/L	108.3	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0019	.04816	mg/L	92.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0019	.04956	mg/L	95.2	70	130	2.87	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02002		.02049	mg/L	102.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.01001		.01047	mg/L	104.6	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.01001	U	.01025	mg/L	102.4	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.01001	U	.0102	mg/L	101.9	70	130	0.49	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02002		.02005	mg/L	100.1	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.01001		.009626	mg/L	96.2	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.01001	U	.009181	mg/L	91.7	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.01001	U	.009377	mg/L	93.7	70	130	2.11	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		98.49	mg/L	98.5	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.9	0.9			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	100.0416		97.89	mg/L	97.8	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	100.0416	180	270.6	mg/L	90.6	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	100.0416	180	272.4	mg/L	92.4	85	115	0.66	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	100.0416	80.8	177.5	mg/L	96.7	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	100.0416	80.8	176.5	mg/L	95.7	85	115	0.56	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	100		98.84	mg/L	98.8	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.9	0.9			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.66	0.66			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	100.0416		100.5	mg/L	100.5	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	100.0416	255	357.8	mg/L	102.8	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	100.0416	255	353.4	mg/L	98.4	70	130	1.24	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		100.38	mg/L	100.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.9	0.9			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.66	0.66			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	100.0416		98.31	mg/L	98.3	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	100.0416	26.1	124.2	mg/L	98.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	100.0416	26.1	124.4	mg/L	98.3	70	130	0.16	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.028	mg/L	101.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5		.492	mg/L	98.4	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5	.02	.492	mg/L	94.4	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5	.02	.494	mg/L	94.8	85	115	0.41	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.984	mg/L	99.2	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.03	0.03			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.022	0.022			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	.5		.495	mg/L	99	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	.5	1.42	1.933	mg/L	102.6	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	.5	1.42	1.903	mg/L	96.6	70	130	1.56	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.001	mg/L	100.1	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	.5		.486	mg/L	97.2	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	.5	.21	.684	mg/L	94.8	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	.5	.21	.683	mg/L	94.6	70	130	0.15	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05333	mg/L	106.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05309	mg/L	106.1	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.0002	.05226	mg/L	104	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.0002	.05241	mg/L	104.3	70	130	0.29	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05266	mg/L	105.3	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04927	mg/L	98.4	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.05043	mg/L	100.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.05083	mg/L	101.6	70	130	0.79	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05015		.05246	mg/L	104.6	90	110			
WG346827ICB	ICB	07/02/13 3:49				.00013	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05203	mg/L	104	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.04901	mg/L	97.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.04916	mg/L	98.2	70	130	0.31	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05015		.04835	mg/L	96.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04588	mg/L	91.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.04574	mg/L	91.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.04599	mg/L	91.9	70	130	0.55	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.0048	mg/L	100.2	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.015	0.015			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.993	mg/L	99.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.01	mg/L	101	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.014	mg/L	101.4	85	115	0.4	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.9455	mg/L	97.3	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.015	0.015			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.011	0.011			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	1		1.002	mg/L	100.2	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	1	U	1.028	mg/L	102.8	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	1	U	1.009	mg/L	100.9	70	130	1.87	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.9652	mg/L	98.3	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.015	0.015			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.011	0.011			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		.9805	mg/L	98.1	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	.971	mg/L	97.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	.9694	mg/L	96.9	70	130	0.16	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05244	mg/L	104.9	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05		.0526	mg/L	105.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05	U	.05153	mg/L	103.1	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05	U	.05165	mg/L	103.3	70	130	0.23	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.0518	mg/L	103.6	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05		.04894	mg/L	97.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05	.0028	.0531	mg/L	100.6	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05	.0028	.05382	mg/L	102	70	130	1.35	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.04937	mg/L	98.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0006	0.0006			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.05231	mg/L	104.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	U	.05174	mg/L	103.3	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	U	.0509	mg/L	101.6	70	130	1.64	20	

SPF Water Engineering

ACZ Project ID: ***L12882***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04801	mg/L	96	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0006	0.0006			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00044	0.00044			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.04856	mg/L	96.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	.0173	.06588	mg/L	97	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	.0173	.06741	mg/L	100	70	130	2.3	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.991	mg/L	99.6	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5		.496	mg/L	99.2	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5	U	.546	mg/L	109.2	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5	U	.546	mg/L	109.2	85	115	0	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346694													
WG346694ICV	ICV	06/29/13 10:44	II130514-1	2		1.974	mg/L	98.7	95	105			
WG346694ICB	ICB	06/29/13 10:50				U	mg/L		-0.03	0.03			
WG346643LRB	LRB	06/29/13 11:02				U	mg/L		-0.022	0.022			
WG346643LFB	LFB	06/29/13 11:05	II130621-2	.5		.515	mg/L	103	85	115			
L12882-01LFM	LFM	06/29/13 11:30	II130621-2	.5	.1	.636	mg/L	107.2	70	130			
L12882-01LFMD	LFMD	06/29/13 11:40	II130621-2	.5	.1	.628	mg/L	105.6	70	130	1.27	20	
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.908	mg/L	95.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	.5		.494	mg/L	98.8	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	.5	U	.482	mg/L	96.4	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	.5	U	.48	mg/L	96	70	130	0.42	20	

SPF Water Engineering ACZ Project ID: ***L12882***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12882-01	WG346859	Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG346694	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346854	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L12882***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12882-02	WG346859	Arsenic, total	M200.8 ICP-MS	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
		Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG346694	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346854	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering

ACZ Project ID: ***L12882***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12882-03	WG346859	Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346854	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12882
Date Received: 06/21/2013 10:15
Received By: gac
Date Printed: 6/24/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3935	13.6	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L112882

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E Mallard Dr Ste 350
Boise ID 83706
Telephone: 208 383 4140

Copy of Report to:

Name:
Company:
E-mail:
Telephone:

Invoice to:

Name: SAME AS ABOVE
Company:
E-mail:
Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [ ]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW
PO#: Colico 2nd Quarter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote: SPF-2013-GW
BLM	6-18-13 14:00	GW	7	X
59763	6-18-13 16:00	GW	7	X
Bishop	6-18-13 18:25	GW	7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	6-18-13 22:00		
		6-21-13	10:15

L112882 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 10, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12883

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 21, 2013. This project has been assigned to ACZ's project number, L12883. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12883. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 09, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: 59761

ACZ Sample ID: ***L12883-01***
Date Sampled: *06/18/13 10:15*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 11:28	mla
Cyanide, WAD	SM4500-CN I- distillation								06/30/13 23:01	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/01/13 9:13	mla
Total Hot Plate Digestion	M200.2 ICP								07/01/13 14:44	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 17:33	las

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: 59761

ACZ Sample ID: ***L12883-01***
Date Sampled: *06/18/13 10:15*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 20:22	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/13 21:42	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 5:15	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/13 20:02	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0234			mg/L	0.0002	0.001	07/02/13 5:15	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0240		*	mg/L	0.0002	0.001	07/02/13 20:02	msh
Barium, dissolved	M200.7 ICP	1	0.047			mg/L	0.003	0.02	07/02/13 13:34	jjc
Barium, total	M200.7 ICP	1	0.045			mg/L	0.003	0.02	07/03/13 11:37	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:15	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 20:02	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:22	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 16:17	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/01/13 20:22	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/03/13 11:37	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:15	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:02	msh
Calcium, dissolved	M200.7 ICP	1	41.7			mg/L	0.2	1	07/02/13 13:34	jjc
Calcium, total	M200.7 ICP	1	43.1			mg/L	0.2	1	07/02/13 21:42	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0005	0.002	07/02/13 5:15	pmc
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/02/13 20:02	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	07/02/13 5:15	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	07/02/13 20:02	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	07/02/13 5:15	pmc
Copper, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/02/13 20:02	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:22	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:42	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 20:22	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/13 21:42	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:15	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:02	msh
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/02/13 13:34	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/02/13 21:42	aeb
Magnesium, dissolved	M200.7 ICP	1	10.2			mg/L	0.2	1	07/02/13 13:34	jjc
Magnesium, total	M200.7 ICP	1	10.4			mg/L	0.2	1	07/02/13 21:42	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0025	B		mg/L	0.0005	0.003	07/02/13 5:15	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 20:02	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	06/28/13 11:46	las
Mercury, total	M1631, Atomic Fluorescence	2	1.2			ng/L	0.4	1	06/27/13 13:11	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0028	B		mg/L	0.0005	0.003	07/02/13 5:15	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	07/02/13 20:02	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 5:15	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 20:02	msh
Potassium, dissolved	M200.7 ICP	1	5.8			mg/L	0.3	2	07/01/13 20:22	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: 59761

ACZ Sample ID: ***L12883-01***
Date Sampled: *06/18/13 10:15*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.0			mg/L	0.3	2	07/02/13 21:42	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:22	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:42	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	07/02/13 5:15	pmc
Selenium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0003	07/02/13 20:02	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:15	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 20:02	msh
Sodium, dissolved	M200.7 ICP	1	23.4			mg/L	0.3	2	07/02/13 13:34	jjc
Sodium, total	M200.7 ICP	1	24.3			mg/L	0.3	2	07/02/13 21:42	aeb
Strontium, dissolved	M200.7 ICP	1	0.21			mg/L	0.01	0.05	07/01/13 20:22	jjc
Strontium, total	M200.7 ICP	1	0.23			mg/L	0.01	0.05	07/02/13 21:42	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:15	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:02	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 5:15	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 20:02	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:22	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/13 21:42	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/02/13 5:15	pmc
Uranium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	07/02/13 20:02	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0206			mg/L	0.0002	0.001	07/02/13 5:15	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0225			mg/L	0.0002	0.001	07/02/13 20:02	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/13 20:22	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/13 21:42	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	143		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	8	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	151		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	412		*	umhos/cm	1	10	06/22/13 23:00	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 13:56	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:39	mpb
Hardness as CaCO3	SM2340B - Calculation		146			mg/L	1	7	07/10/13 12:43	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 19:05	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	24.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/02/13 12:20	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/25/13 16:54	dcw

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L12883-02***
Date Sampled: *06/18/13 11:10*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 11:36	mla
Cyanide, WAD	SM4500-CN I- distillation								06/30/13 23:58	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/01/13 9:20	mla
Total Hot Plate Digestion	M200.2 ICP								07/01/13 14:56	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 17:45	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L12883-02***
Date Sampled: *06/18/13 11:10*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	07/01/13 20:25	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/13 21:45	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/02/13 5:19	pmc
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/02/13 20:05	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0376			mg/L	0.0002	0.001	07/02/13 5:19	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0380		*	mg/L	0.0002	0.001	07/02/13 20:05	msh
Barium, dissolved	M200.7 ICP	1	0.031			mg/L	0.003	0.02	07/02/13 13:37	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	07/03/13 11:40	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:19	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 20:05	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:25	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 16:20	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/01/13 20:25	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/03/13 11:40	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:19	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:05	msh
Calcium, dissolved	M200.7 ICP	1	38.2			mg/L	0.2	1	07/02/13 13:37	jjc
Calcium, total	M200.7 ICP	1	39.7			mg/L	0.2	1	07/02/13 21:45	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/02/13 5:19	pmc
Chromium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/02/13 20:05	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	07/02/13 5:19	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	07/02/13 20:05	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	07/02/13 5:19	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 20:05	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:25	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:45	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 20:25	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/13 21:45	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:19	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:05	msh
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/02/13 13:37	jjc
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	07/02/13 21:45	aeb
Magnesium, dissolved	M200.7 ICP	1	7.0			mg/L	0.2	1	07/02/13 13:37	jjc
Magnesium, total	M200.7 ICP	1	7.2			mg/L	0.2	1	07/02/13 21:45	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/02/13 5:19	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/13 20:05	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	06/28/13 11:53	las
Mercury, total	M1631, Atomic Fluorescence	2	0.8	B	*	ng/L	0.4	1	06/27/13 13:18	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	07/02/13 5:19	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	07/02/13 20:05	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 5:19	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 20:05	msh
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.3	2	07/01/13 20:25	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L12883-02***
Date Sampled: *06/18/13 11:10*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.3	2	07/02/13 21:45	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:25	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:45	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0003	07/02/13 5:19	pmc
Selenium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0003	07/02/13 20:05	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:19	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 20:05	msh
Sodium, dissolved	M200.7 ICP	1	25.2			mg/L	0.3	2	07/02/13 13:37	jjc
Sodium, total	M200.7 ICP	1	26.1			mg/L	0.3	2	07/02/13 21:45	aeb
Strontium, dissolved	M200.7 ICP	1	0.19			mg/L	0.01	0.05	07/01/13 20:25	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	07/02/13 21:45	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:19	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:05	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 5:19	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 20:05	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:25	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/13 21:45	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	07/02/13 5:19	pmc
Uranium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	07/02/13 20:05	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0185			mg/L	0.0002	0.001	07/02/13 5:19	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0205			mg/L	0.0002	0.001	07/02/13 20:05	msh
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	07/01/13 20:25	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/13 21:45	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	138		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	7	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	146		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	379		*	umhos/cm	1	10	06/22/13 23:10	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 13:57	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:40	mpb
Hardness as CaCO3	SM2340B - Calculation		124			mg/L	1	7	07/10/13 12:43	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 19:06	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	23.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/02/13 12:21	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/25/13 16:56	dcw

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L12883-03***
Date Sampled: *06/18/13 12:55*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								06/30/13 11:44	mla
Cyanide, WAD	SM4500-CN I- distillation								07/01/13 0:56	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/01/13 9:27	mla
Total Hot Plate Digestion	M200.2 ICP								07/01/13 15:31	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								06/27/13 17:57	las

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L12883-03***
Date Sampled: *06/18/13 12:55*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/13 20:28	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/13 21:54	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	07/02/13 5:22	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	07/02/13 20:08	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0263			mg/L	0.0002	0.001	07/02/13 5:22	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0268		*	mg/L	0.0002	0.001	07/02/13 20:08	msh
Barium, dissolved	M200.7 ICP	1	0.054			mg/L	0.003	0.02	07/02/13 13:40	jjc
Barium, total	M200.7 ICP	1	0.052			mg/L	0.003	0.02	07/03/13 11:49	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:22	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/02/13 20:08	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/13 20:28	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 16:30	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/01/13 20:28	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/03/13 11:49	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:22	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:08	msh
Calcium, dissolved	M200.7 ICP	1	39.0			mg/L	0.2	1	07/02/13 13:40	jjc
Calcium, total	M200.7 ICP	1	40.0			mg/L	0.2	1	07/02/13 21:54	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/02/13 5:22	pmc
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/02/13 20:08	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/02/13 5:22	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	07/02/13 20:08	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0103			mg/L	0.0005	0.003	07/02/13 5:22	pmc
Copper, total	M200.8 ICP-MS	1	0.0131			mg/L	0.0005	0.003	07/02/13 20:08	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:28	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:54	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/13 20:28	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/13 21:54	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:22	pmc
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/02/13 20:08	msh
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	07/02/13 13:40	jjc
Lithium, total	M200.7 ICP	1	0.06	B		mg/L	0.02	0.1	07/02/13 21:54	aeb
Magnesium, dissolved	M200.7 ICP	1	6.6			mg/L	0.2	1	07/02/13 13:40	jjc
Magnesium, total	M200.7 ICP	1	6.7			mg/L	0.2	1	07/02/13 21:54	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.003	07/02/13 5:22	pmc
Manganese, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.003	07/02/13 20:08	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	06/28/13 11:59	las
Mercury, total	M1631, Atomic Fluorescence	2	1.1			ng/L	0.4	1	06/27/13 13:25	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	07/02/13 5:22	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	07/02/13 20:08	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 5:22	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/13 20:08	msh
Potassium, dissolved	M200.7 ICP	1	7.0			mg/L	0.3	2	07/01/13 20:28	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L12883-03***
Date Sampled: *06/18/13 12:55*
Date Received: *06/21/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.4			mg/L	0.3	2	07/02/13 21:54	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/13 20:28	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/13 21:54	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	07/02/13 5:22	pmc
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	07/02/13 20:08	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 5:22	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/13 20:08	msh
Sodium, dissolved	M200.7 ICP	1	25.3			mg/L	0.3	2	07/02/13 13:40	jjc
Sodium, total	M200.7 ICP	1	26.1			mg/L	0.3	2	07/02/13 21:54	aeb
Strontium, dissolved	M200.7 ICP	1	0.23			mg/L	0.01	0.05	07/01/13 20:28	jjc
Strontium, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	07/02/13 21:54	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 5:22	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/13 20:08	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 5:22	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/13 20:08	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/13 20:28	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/13 21:54	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	07/02/13 5:22	pmc
Uranium, total	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	07/02/13 20:08	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0147			mg/L	0.0002	0.001	07/02/13 5:22	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0173			mg/L	0.0002	0.001	07/02/13 20:08	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/13 20:28	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/02/13 21:54	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	132		*	mg/L	2	20	06/22/13 0:00	khw
Carbonate as CaCO3		1	9	B	*	mg/L	2	20	06/22/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/22/13 0:00	khw
Total Alkalinity		1	141		*	mg/L	2	20	06/22/13 0:00	khw
Conductivity @25C	SM2510B	1	379		*	umhos/cm	1	10	06/22/13 23:19	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:00	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 14:41	mpb
Hardness as CaCO3	SM2340B - Calculation		125			mg/L	1	7	07/10/13 12:44	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/01/13 19:08	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	06/22/13 0:00	khw
pH measured at		1	24.0		*	C	0.1	0.1	06/22/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/02/13 12:22	tcd
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/25/13 16:58	dcw

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12883***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203PBW1	PBW	06/22/13 10:56				16.2	mg/L		-20	20			
WG346203LCSW2	LCSW	06/22/13 11:08	WC130613-	820.0001		752.5	mg/L	91.8	90	110			
WG346203LCSW5	LCSW	06/22/13 13:44	WC130613-	820.0001		783.1	mg/L	95.5	90	110			
WG346203PBW2	PBW	06/22/13 13:52				2.5	mg/L		-20	20			
WG346203LCSW8	LCSW	06/22/13 17:32	WC130613-	820.0001		787.9	mg/L	96.1	90	110			
WG346203PBW3	PBW	06/22/13 17:41				3.8	mg/L		-20	20			
WG346203LCSW11	LCSW	06/22/13 20:10	WC130613-	820.0001		770.5	mg/L	94	90	110			
WG346203PBW4	PBW	06/22/13 20:18				2.8	mg/L		-20	20			
L12883-03DUP	DUP	06/22/13 23:28			141	141.9	mg/L				0.6	20	
WG346203LCSW14	LCSW	06/22/13 23:40	WC130613-	820.0001		776.6	mg/L	94.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.027	mg/L	101.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.09	0.09			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1.0011		1.024	mg/L	102.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1.0011	U	.978	mg/L	97.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1.0011	U	.99	mg/L	98.9	85	115	1.22	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.004	mg/L	100.2	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.09	0.09			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.066	0.066			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1.0011		1.022	mg/L	102.1	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1.0011	U	1.017	mg/L	101.6	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1.0011	U	1.016	mg/L	101.5	70	130	0.1	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02		.02059	mg/L	103	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0012	0.0012			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.01		.01004	mg/L	100.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.01	U	.00972	mg/L	97.2	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.01	U	.00989	mg/L	98.9	70	130	1.73	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02		.02082	mg/L	104.1	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0012	0.0012			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00088	0.00088			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.01		.0114	mg/L	114	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.01	.0006	.01154	mg/L	109.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.01	.0006	.01171	mg/L	111.1	70	130	1.46	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05327	mg/L	106.5	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0006	0.0006			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05202	mg/L	103.9	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05512	mg/L	110.1	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.0546	mg/L	109.1	70	130	0.95	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05099	mg/L	102	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0006	0.0006			
WG346580LRB	LRB	07/02/13 18:44				.00054	mg/L		-0.00044	0.00044			B7
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.05502	mg/L	109.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0268	.07726	mg/L	100.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0268	.07837	mg/L	103	70	130	1.43	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	2		1.9692	mg/L	98.5	95	105			
WG346850ICB	ICB	07/02/13 12:32				.0041	mg/L		-0.009	0.009			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	.5		.4893	mg/L	97.9	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	.5	.007	.4856	mg/L	95.7	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	.5	.007	.4865	mg/L	95.9	85	115	0.19	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	.5	.017	.505	mg/L	97.6	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	.5	.017	.5098	mg/L	98.6	85	115	0.95	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346936													
WG346936ICV	ICV	07/03/13 11:11	II130514-1	2		1.99	mg/L	99.5	95	105			
WG346936ICB	ICB	07/03/13 11:15				U	mg/L		-0.009	0.009			
WG346791LRB	LRB	07/03/13 11:27				U	mg/L		-0.0066	0.0066			
WG346791LFB	LFB	07/03/13 11:31	II130621-2	.5		.4986	mg/L	99.7	85	115			
L12883-02LFM	LFM	07/03/13 11:43	II130621-2	.5	.028	.5229	mg/L	99	70	130			
L12883-02LFMD	LFMD	07/03/13 11:46	II130621-2	.5	.028	.5221	mg/L	98.8	70	130	0.15	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.04866	mg/L	97.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.05072	mg/L	101.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	.00037	.05573	mg/L	110.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	.00037	.05567	mg/L	110.4	70	130	0.11	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04732	mg/L	94.6	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.05085	mg/L	101.5	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	U	.04452	mg/L	88.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	U	.04493	mg/L	89.7	70	130	0.92	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.982	mg/L	99.1	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.12	0.12			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.964	mg/L	96.4	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.007	mg/L	100.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	.996	mg/L	99.6	85	115	1.1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346976													
WG346976ICV	ICV	07/03/13 15:50	II130514-1	2		2.011	mg/L	100.6	95	105			
WG346976ICB	ICB	07/03/13 15:56				U	mg/L		-0.12	0.12			
WG346791LRB	LRB	07/03/13 16:08				U	mg/L		-0.088	0.088			
WG346791LFB	LFB	07/03/13 16:11	II130621-2	1		1.012	mg/L	101.2	85	115			
L12883-02LFM	LFM	07/03/13 16:23	II130621-2	1	U	.987	mg/L	98.7	70	130			
L12883-02LFMD	LFMD	07/03/13 16:27	II130621-2	1	U	.989	mg/L	98.9	70	130	0.2	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.008	mg/L	100.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5005		.489	mg/L	97.7	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5005	.2	.699	mg/L	99.7	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5005	.2	.711	mg/L	102.1	85	115	1.7	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346936													
WG346936ICV	ICV	07/03/13 11:11	II130514-1	2		1.999	mg/L	100	95	105			
WG346936ICB	ICB	07/03/13 11:15				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/03/13 11:27				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/03/13 11:31	II130621-2	.5005		.514	mg/L	102.7	85	115			
L12883-02LFM	LFM	07/03/13 11:43	II130621-2	.5005	.07	.575	mg/L	100.9	70	130			
L12883-02LFMD	LFMD	07/03/13 11:46	II130621-2	.5005	.07	.574	mg/L	100.7	70	130	0.17	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05229	mg/L	104.6	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.0532	mg/L	106.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	.0001	.05497	mg/L	109.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	.0001	.05443	mg/L	108.4	70	130	0.99	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05042	mg/L	100.8	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.05114	mg/L	102.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	U	.04755	mg/L	94.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	U	.04828	mg/L	96.4	70	130	1.52	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		97.82	mg/L	97.8	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.6	0.6			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	67.95918		69.65	mg/L	102.5	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	67.95918	9	76.15	mg/L	98.8	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	67.95918	9	76.51	mg/L	99.3	85	115	0.47	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	67.95918	3	71.89	mg/L	101.4	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	67.95918	3	71.86	mg/L	101.3	85	115	0.04	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		98.44	mg/L	98.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.6	0.6			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.44	0.44			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	67.95918		69.16	mg/L	101.8	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	67.95918	39.7	107.6	mg/L	99.9	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	67.95918	39.7	106.8	mg/L	98.7	70	130	0.75	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05036	mg/L	100.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05317	mg/L	106.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05149	mg/L	102.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05151	mg/L	102.9	70	130	0.04	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04893	mg/L	97.9	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04834	mg/L	96.6	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.001	.0487	mg/L	95.3	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.001	.05272	mg/L	103.3	70	130	7.93	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05012	mg/L	100.2	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05225	mg/L	104.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.01041	.06271	mg/L	104.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.01041	.06269	mg/L	104.5	70	130	0.03	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04961	mg/L	99.2	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04912	mg/L	98.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.00013	.04873	mg/L	97.1	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.00013	.04953	mg/L	98.7	70	130	1.63	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW1	LCSW	06/22/13 10:57	PCN41764	1408.8		1454.1	µmhos/cm	103.2	90	110			
WG346203LCSW4	LCSW	06/22/13 13:32	PCN41764	1408.8		1422.2	µmhos/cm	101	90	110			
WG346203LCSW7	LCSW	06/22/13 17:21	PCN41764	1408.8		1400.7	µmhos/cm	99.4	90	110			
WG346203LCSW10	LCSW	06/22/13 19:59	PCN41764	1408.8		1378.1	µmhos/cm	97.8	90	110			
L12883-03DUP	DUP	06/22/13 23:28			379	380	µmhos/cm				0.3	20	
WG346203LCSW13	LCSW	06/22/13 23:29	PCN41764	1408.8		1350.3	µmhos/cm	95.8	90	110			

SPF Water Engineering

ACZ Project ID: ***L12883***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05204	mg/L	104.1	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05343	mg/L	106.8	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.0007	.05326	mg/L	105	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.0007	.0532	mg/L	104.9	70	130	0.11	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04968	mg/L	99.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04916	mg/L	98.2	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0131	.05876	mg/L	91.2	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0131	.06039	mg/L	94.5	70	130	2.74	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346723LRB	LRB	07/02/13 13:39				U	mg/L		-0.003	0.003			
WG346723LFB	LFB	07/02/13 13:39	WI130621-2	.2		.2041	mg/L	102.1	90	110			
L12882-02DUP	DUP	07/02/13 13:53			U	U	mg/L				0	20	RA
L12882-03LFM	LFM	07/02/13 13:55	WI130621-2	.2	U	.1895	mg/L	94.8	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346875													
WG346738LRB	LRB	07/02/13 14:27				U	mg/L		-0.003	0.003			
WG346738LFB	LFB	07/02/13 14:28	WI130621-4	.2		.1873	mg/L	93.7	90	110			
L12870-01DUP	DUP	07/02/13 14:30			U	U	mg/L				0	20	RA
L12870-02LFM	LFM	07/02/13 14:32	WI130621-4	.2	U	.1886	mg/L	94.3	90	110			
L12883-03DUP	DUP	07/02/13 14:42			U	U	mg/L				0	20	RA
L12887-01LFM	LFM	07/02/13 14:44	WI130621-4	.2	.004	.1899	mg/L	93	90	110			

SPF Water Engineering

ACZ Project ID: ***L12883***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.05	mg/L	102.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.3	0.3			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.99	mg/L	99	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	.99	mg/L	99	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.03	mg/L	103	85	115	3.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.03	mg/L	101.5	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.3	0.3			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.22	0.22			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		1.01	mg/L	101	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	1	mg/L	100	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	1	mg/L	100	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.98	mg/L	99	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.06	0.06			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.983	mg/L	98.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.059	mg/L	105.9	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.06	mg/L	106	85	115	0.09	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.995	mg/L	99.8	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.06	0.06			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.044	0.044			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		1.025	mg/L	102.5	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	1.012	mg/L	101.2	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	1.004	mg/L	100.4	70	130	0.79	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05287	mg/L	105.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05253	mg/L	105	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.05216	mg/L	104.2	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05179	mg/L	103.5	70	130	0.71	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05033	mg/L	100.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04692	mg/L	93.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0002	.04755	mg/L	94.6	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0002	.04783	mg/L	95.2	70	130	0.59	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	2		1.991	mg/L	99.6	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.06	0.06			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	1		.977	mg/L	97.7	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	1	.1	1.043	mg/L	94.3	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	1	.1	1.049	mg/L	94.9	85	115	0.57	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	1	U	.992	mg/L	99.2	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	1	U	.996	mg/L	99.6	85	115	0.4	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.984	mg/L	99.2	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.06	0.06			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.044	0.044			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		.972	mg/L	97.2	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	.05	1.013	mg/L	96.3	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	.05	1.011	mg/L	96.1	70	130	0.2	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		97.23	mg/L	97.2	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.6	0.6			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	49.99941		49.23	mg/L	98.5	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	49.99941	.6	48.05	mg/L	94.9	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	49.99941	.6	48.24	mg/L	95.3	85	115	0.39	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	49.99941	.7	48.96	mg/L	96.5	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	49.99941	.7	49.38	mg/L	97.4	85	115	0.85	20	

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ACZ Project ID: ***L12883***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		98.69	mg/L	98.7	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.6	0.6			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.44	0.44			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	49.99941		49.51	mg/L	99	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	49.99941	7.2	56.26	mg/L	98.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	49.99941	7.2	55.81	mg/L	97.2	70	130	0.8	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05153	mg/L	103.1	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05516	mg/L	110.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.2856	.3356	mg/L	99.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.2856	.3367	mg/L	102.1	70	130	0.33	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05058	mg/L	101.2	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04988	mg/L	99.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0011	.0526	mg/L	102.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0011	.05316	mg/L	104	70	130	1.06	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346620													
WG346620CCV1	CCV	06/28/13 8:59	HG130517-4	10		11	ng/L	110	76.5	123.4			
WG346620CCB1	CCB	06/28/13 9:06				U	ng/L		-0.5	0.5			
WG346620PQV	PQV	06/28/13 9:12	HG130517-6	.5		.61	ng/L	122	70	130			
WG346620LFB	LFB	06/28/13 9:19	HG130517-5	2		2.36	ng/L	118	71	125			
WG346620CCV2	CCV	06/28/13 10:19	HG130517-4	10		11.35	ng/L	113.5	76.5	123.4			
WG346620CCB2	CCB	06/28/13 10:26				U	ng/L		-0.5	0.5			
WG346620CCV3	CCV	06/28/13 11:13	HG130517-4	10		11.14	ng/L	111.4	76.5	123.4			
WG346620CCB3	CCB	06/28/13 11:19				U	ng/L		-0.5	0.5			
WG346620CCV4	CCV	06/28/13 12:06	HG130517-4	10		10.56	ng/L	105.6	76.5	123.4			
WG346620CCB4	CCB	06/28/13 12:13				U	ng/L		-0.5	0.5			
L12937-04MS	MS	06/28/13 12:46	HG130517-5	2	.6	2.54	ng/L	97	71	125			
L12937-04MSD	MSD	06/28/13 12:53	HG130517-5	2	.6	3.01	ng/L	120.5	71	125	16.94	24	
WG346620CCV5	CCV	06/28/13 12:59	HG130517-4	10		10.14	ng/L	101.4	76.5	123.4			
WG346620CCB5	CCB	06/28/13 13:06				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L12883***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346538													
WG346538CCV1	CCV	06/27/13 9:30	HG130517-4	10		10.47	ng/L	104.7	76.5	123.4			
WG346538CCB1	CCB	06/27/13 9:37				U	ng/L		-0.5	0.5			
WG346538PQV	PQV	06/27/13 9:44	HG130517-6	.5		.53	ng/L	106	70	130			
WG346538LFB	LFB	06/27/13 9:50	HG130517-5	2		1.87	ng/L	93.5	71	125			
WG346538CCV2	CCV	06/27/13 11:12	HG130517-4	10		10.55	ng/L	105.5	76.5	123.4			
WG346538CCB2	CCB	06/27/13 11:18				U	ng/L		-0.5	0.5			
WG346538CCV3	CCV	06/27/13 11:58	HG130517-4	10		10.8	ng/L	108	76.5	123.4			
WG346538CCB3	CCB	06/27/13 12:05				U	ng/L		-0.5	0.5			
WG346538CCV4	CCV	06/27/13 12:58	HG130517-4	10		8.96	ng/L	89.6	76.5	123.4			
WG346538CCB4	CCB	06/27/13 13:05				U	ng/L		-0.5	0.5			
L12845-01MS	MS	06/27/13 13:39	HG20XPRE	800	20	57.6	ng/L	94	71	125			
L12845-01MSD	MSD	06/27/13 13:46	HG20XPRE	800	20	56.9	ng/L	92.3	71	125	1.22	24	
WG346538CCV5	CCV	06/27/13 14:06	HG130517-4	10		9.59	ng/L	95.9	76.5	123.4			
WG346538CCB5	CCB	06/27/13 14:12				.21	ng/L		-0.5	0.5			
WG346538CCV6	CCV	06/27/13 14:52	HG130517-4	10		9.22	ng/L	92.2	76.5	123.4			
WG346538CCB6	CCB	06/27/13 14:59				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02006		.01991	mg/L	99.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0015	0.0015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05		.05151	mg/L	103	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05	U	.05069	mg/L	101.4	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05	U	.05096	mg/L	101.9	70	130	0.53	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02006		.019	mg/L	94.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0015	0.0015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.0011	0.0011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05		.04656	mg/L	93.1	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05	.0031	.05101	mg/L	95.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05	.0031	.05187	mg/L	97.5	70	130	1.67	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05275	mg/L	105.5	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0018	0.0018			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05356	mg/L	107	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.01	.0623	mg/L	104.5	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.01	.06211	mg/L	104.1	70	130	0.31	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04986	mg/L	99.7	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0018	0.0018			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00132	0.00132			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04869	mg/L	97.3	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.04699	mg/L	93.9	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.0479	mg/L	95.7	70	130	1.92	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346785													
WG346785ICV	ICV	07/01/13 13:42	WI121105-5	1.003		1	mg/L	99.7	90	110			
WG346785ICB	ICB	07/01/13 13:45				U	mg/L		-0.15	0.15			
WG346818													
WG346818LFB1	LFB	07/01/13 18:36	WI121218-3	1		1.059	mg/L	105.9	90	110			
L12881-05AS	AS	07/01/13 18:53	WI121218-3	1	U	1.09	mg/L	109	90	110			
L12881-06DUP	DUP	07/01/13 18:55			U	U	mg/L				0	20	RA
WG346818LFB2	LFB	07/01/13 19:07	WI121218-3	1		1.099	mg/L	109.9	90	110			
L12883-03AS	AS	07/01/13 19:10	WI121218-3	1	U	1.098	mg/L	109.8	90	110			
L12897-01DUP	DUP	07/01/13 19:12			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346203													
WG346203LCSW3	LCSW	06/22/13 11:12	PCN40853	6		6	units	100	98	102			
WG346203LCSW6	LCSW	06/22/13 13:47	PCN40853	6		6.01	units	100.2	98	102			
WG346203LCSW9	LCSW	06/22/13 17:35	PCN40853	6		6.01	units	100.2	98	102			
WG346203LCSW12	LCSW	06/22/13 20:13	PCN40853	6		6.05	units	100.8	98	102			
L12883-03DUP	DUP	06/22/13 23:28			8.4	8.43	units				0.4	20	
WG346203LCSW15	LCSW	06/22/13 23:44	PCN40853	6		6.05	units	100.8	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346848													
WG346848ICV	ICV	07/02/13 10:44	WI130520-5	.65228		.641	mg/L	98.3	90	110			
WG346848ICB	ICB	07/02/13 10:45				U	mg/L		-0.03	0.03			
WG346867													
WG346739LRB	LRB	07/02/13 12:14				U	mg/L		-0.03	0.03			
WG346739LFB	LFB	07/02/13 12:15	WI130620-1	.5		.503	mg/L	100.6	90	110			
L12734-01LFM	LFM	07/02/13 12:17	WI130620-1	.5	.4	.906	mg/L	101.2	90	110			
L12734-02DUP	DUP	07/02/13 12:19			.11	.116	mg/L				5.3	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	20		20.09	mg/L	100.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.9	0.9			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	99.97161		98.59	mg/L	98.6	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	99.97161	3.9	97.23	mg/L	93.4	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	99.97161	3.9	97.7	mg/L	93.8	85	115	0.48	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	20		20	mg/L	100	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.9	0.9			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.66	0.66			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	99.97161		98.62	mg/L	98.6	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	99.97161	6.1	104.5	mg/L	98.4	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	99.97161	6.1	104.1	mg/L	98	70	130	0.38	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346398													
WG346398PBW	PBW	06/25/13 16:20				U	mg/L		-6	6			
WG346398LCSW	LCSW	06/25/13 16:21	PCN42882	160		147	mg/L	91.9	80	120			
L12883-03DUP	DUP	06/25/13 16:59			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.97	mg/L	98.5	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.3	0.3			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1.0009		.98	mg/L	97.9	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1.0009	U	.98	mg/L	97.9	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1.0009	U	.99	mg/L	98.9	85	115	1.02	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.94	mg/L	97	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.3	0.3			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.22	0.22			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1.0009		1	mg/L	99.9	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1.0009	U	1	mg/L	99.9	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1.0009	U	.99	mg/L	98.9	70	130	1.01	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05197	mg/L	103.9	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05444	mg/L	108.8	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.0569	mg/L	113.7	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.05637	mg/L	112.6	70	130	0.94	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.0517	mg/L	103.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.0542	mg/L	108.3	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	.0019	.04816	mg/L	92.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	.0019	.04956	mg/L	95.2	70	130	2.87	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.02002		.02049	mg/L	102.3	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.00015	0.00015			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.01001		.01047	mg/L	104.6	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.01001	U	.01025	mg/L	102.4	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.01001	U	.0102	mg/L	101.9	70	130	0.49	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.02002		.02005	mg/L	100.1	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.00015	0.00015			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00011	0.00011			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.01001		.009626	mg/L	96.2	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.01001	U	.009181	mg/L	91.7	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.01001	U	.009377	mg/L	93.7	70	130	2.11	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346850													
WG346850ICV	ICV	07/02/13 12:26	II130510-1	100		98.49	mg/L	98.5	95	105			
WG346850ICB	ICB	07/02/13 12:32				U	mg/L		-0.9	0.9			
WG346850LFB	LFB	07/02/13 12:44	II130621-2	100.0416		97.89	mg/L	97.8	85	115			
L12835-01AS	AS	07/02/13 12:50	II130621-2	100.0416	180	270.6	mg/L	90.6	85	115			
L12835-01ASD	ASD	07/02/13 12:54	II130621-2	100.0416	180	272.4	mg/L	92.4	85	115	0.66	20	
L12882-03AS	AS	07/02/13 13:28	II130621-2	100.0416	80.8	177.5	mg/L	96.7	85	115			
L12882-03ASD	ASD	07/02/13 13:31	II130621-2	100.0416	80.8	176.5	mg/L	95.7	85	115	0.56	20	

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ACZ Project ID: ***L12883***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	100		100.38	mg/L	100.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.9	0.9			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.66	0.66			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	100.0416		98.31	mg/L	98.3	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	100.0416	26.1	124.2	mg/L	98.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	100.0416	26.1	124.4	mg/L	98.3	70	130	0.16	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.028	mg/L	101.4	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5		.492	mg/L	98.4	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5	.02	.492	mg/L	94.4	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5	.02	.494	mg/L	94.8	85	115	0.41	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		2.001	mg/L	100.1	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	.5		.486	mg/L	97.2	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	.5	.21	.684	mg/L	94.8	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	.5	.21	.683	mg/L	94.6	70	130	0.15	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05333	mg/L	106.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05309	mg/L	106.1	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	.0002	.05226	mg/L	104	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	.0002	.05241	mg/L	104.3	70	130	0.29	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.05266	mg/L	105.3	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04927	mg/L	98.4	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.05043	mg/L	100.8	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.05083	mg/L	101.6	70	130	0.79	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05015		.05246	mg/L	104.6	90	110			
WG346827ICB	ICB	07/02/13 3:49				.00013	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05005		.05203	mg/L	104	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05005	U	.04901	mg/L	97.9	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05005	U	.04916	mg/L	98.2	70	130	0.31	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05015		.04835	mg/L	96.4	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05005		.04588	mg/L	91.7	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05005	U	.04574	mg/L	91.4	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05005	U	.04599	mg/L	91.9	70	130	0.55	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		2.0048	mg/L	100.2	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.015	0.015			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	1		.993	mg/L	99.3	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	1	U	1.01	mg/L	101	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	1	U	1.014	mg/L	101.4	85	115	0.4	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.9652	mg/L	98.3	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.015	0.015			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.011	0.011			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	1		.9805	mg/L	98.1	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	1	U	.971	mg/L	97.1	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	1	U	.9694	mg/L	96.9	70	130	0.16	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.05244	mg/L	104.9	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0003	0.0003			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.05		.0526	mg/L	105.2	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.05	U	.05153	mg/L	103.1	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.05	U	.05165	mg/L	103.3	70	130	0.23	20	

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ACZ Project ID: ***L12883***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.0518	mg/L	103.6	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0003	0.0003			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00022	0.00022			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.05		.04894	mg/L	97.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.05	.0028	.0531	mg/L	100.6	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.05	.0028	.05382	mg/L	102	70	130	1.35	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346827													
WG346827ICV	ICV	07/02/13 3:46	MS130416-2	.05		.04937	mg/L	98.7	90	110			
WG346827ICB	ICB	07/02/13 3:49				U	mg/L		-0.0006	0.0006			
WG346827LFB	LFB	07/02/13 3:52	MS130614-1	.0501		.05231	mg/L	104.4	85	115			
L12878-04AS	AS	07/02/13 4:43	MS130614-1	.0501	U	.05174	mg/L	103.3	70	130			
L12878-04ASD	ASD	07/02/13 4:47	MS130614-1	.0501	U	.0509	mg/L	101.6	70	130	1.64	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346859													
WG346859ICV	ICV	07/02/13 18:38	MS130416-2	.05		.04801	mg/L	96	90	110			
WG346859ICB	ICB	07/02/13 18:41				U	mg/L		-0.0006	0.0006			
WG346580LRB	LRB	07/02/13 18:44				U	mg/L		-0.00044	0.00044			
WG346580LFB	LFB	07/02/13 18:48	MS130614-1	.0501		.04856	mg/L	96.9	85	115			
L12883-03LFM	LFM	07/02/13 20:12	MS130614-1	.0501	.0173	.06588	mg/L	97	70	130			
L12883-03LFMD	LFMD	07/02/13 20:15	MS130614-1	.0501	.0173	.06741	mg/L	100	70	130	2.3	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346768													
WG346768ICV	ICV	07/01/13 18:46	II130510-1	2		1.991	mg/L	99.6	95	105			
WG346768ICB	ICB	07/01/13 18:52				U	mg/L		-0.03	0.03			
WG346768LFB	LFB	07/01/13 19:05	II130621-2	.5		.496	mg/L	99.2	85	115			
L12882-03AS	AS	07/01/13 20:09	II130621-2	.5	U	.546	mg/L	109.2	85	115			
L12882-03ASD	ASD	07/01/13 20:19	II130621-2	.5	U	.546	mg/L	109.2	85	115	0	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346853													
WG346853ICV	ICV	07/02/13 21:14	II130514-1	2		1.908	mg/L	95.4	95	105			
WG346853ICB	ICB	07/02/13 21:20				U	mg/L		-0.03	0.03			
WG346791LRB	LRB	07/02/13 21:33				U	mg/L		-0.022	0.022			
WG346791LFB	LFB	07/02/13 21:36	II130621-2	.5		.494	mg/L	98.8	85	115			
L12883-02LFM	LFM	07/02/13 21:48	II130621-2	.5	U	.482	mg/L	96.4	70	130			
L12883-02LFMD	LFMD	07/02/13 21:51	II130621-2	.5	U	.48	mg/L	96	70	130	0.42	20	

SPF Water Engineering

ACZ Project ID: ***L12883***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12883-01	WG346859	Arsenic, total	M200.8 ICP-MS	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346867	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L12883***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12883-02	WG346859	Arsenic, total	M200.8 ICP-MS	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
	WG346538	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346867	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

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Inorganic Extended Qualifier Report

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ACZ Project ID: ***L12883***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12883-03	WG346859	Arsenic, total	M200.8 ICP-MS	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
		Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG346203	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346872	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346875	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG346818	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG346867	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346398	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346203	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12883
Date Received: 06/21/2013 10:14
Received By: gac
Date Printed: 6/24/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3546	13.4	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. (12883

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com

Address: 300 E Mallard Dr Ste 350
Boise ID 83706
Telephone: 208 383 4140

Copy of Report to:

Name:
Company:

E-mail:
Telephone:

Invoice to:

Name: SAME AS ABOVE
Company:
E-mail:

Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [ ]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW
PO#: Calico 2nd Quarter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote SPF2013-GW
59761	6-18-13 10:15	GW	7	X
59772	6-18-13 11:10	GW	7	X
59760	6-18-13 12:55	GW	7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	6-18-13 21:00		
		[illegible] 6/21/13	10:44

112883 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12893

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 22, 2013. This project has been assigned to ACZ's project number, L12893. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12893. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L12893-01***
Date Sampled: *06/20/13 09:40*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	11.2		*	mg/L	0.5	2.5	07/05/13 19:20	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.38	B	*	mg/L	0.1	0.5	07/05/13 19:20	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.42	H		mg/L	0.06	0.3	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3	2.42	H	*	mg/L	0.06	0.3	06/22/13 15:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 14:56	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270			mg/L	10	20	06/26/13 10:43	dcw
Sulfate	M300.0 - Ion Chromatography	1	18.8			mg/L	0.5	2.5	07/05/13 19:20	jlf

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L12893-02***
Date Sampled: *06/20/13 10:20*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	13.5		*	mg/L	0.5	2.5	07/05/13 19:55	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.38	B	*	mg/L	0.1	0.5	07/05/13 19:55	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.37	H		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.37	H	*	mg/L	0.02	0.1	06/22/13 14:58	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 14:58	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	06/26/13 10:46	dcw
Sulfate	M300.0 - Ion Chromatography	1	24.2			mg/L	0.5	2.5	07/05/13 19:55	jlf

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PROD-1

ACZ Sample ID: ***L12893-03***
Date Sampled: *06/20/13 11:50*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	23.3		*	mg/L	0.5	2.5	07/05/13 20:13	jlf
Fluoride	M300.0 - Ion Chromatography	1	1.12		*	mg/L	0.1	0.5	07/05/13 20:13	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/22/13 15:01	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 15:01	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	370			mg/L	10	20	06/26/13 10:48	dcw
Sulfate	M300.0 - Ion Chromatography	1	83.5			mg/L	0.5	2.5	07/05/13 20:13	jlf

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L12893-04***
Date Sampled: *06/20/13 12:50*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	15.2		*	mg/L	0.5	2.5	07/08/13 11:57	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.51		*	mg/L	0.1	0.5	07/08/13 11:57	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.02	BH		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.02	BH	*	mg/L	0.02	0.1	06/22/13 15:02	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 15:02	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	350			mg/L	10	20	06/26/13 10:54	dcw
Sulfate	M300.0 - Ion Chromatography	1	42.3			mg/L	0.5	2.5	07/08/13 11:57	jlf

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L12893-05***
Date Sampled: *06/20/13 15:00*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.36		*	mg/L	0.5	2.5	07/08/13 12:15	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.63		*	mg/L	0.1	0.5	07/08/13 12:15	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.05	H		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.05	H	*	mg/L	0.02	0.1	06/22/13 15:03	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 15:03	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	06/26/13 10:56	dcw
Sulfate	M300.0 - Ion Chromatography	1	44.9			mg/L	0.5	2.5	07/08/13 12:15	jlf

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L12893-06***
Date Sampled: *06/20/13 14:00*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	10.8		*	mg/L	0.5	2.5	07/08/13 12:32	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.63		*	mg/L	0.1	0.5	07/08/13 12:32	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.89	H		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.89	H	*	mg/L	0.02	0.1	06/22/13 15:06	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/22/13 15:06	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	310			mg/L	10	20	06/26/13 10:59	dcw
Sulfate	M300.0 - Ion Chromatography	1	42.7			mg/L	0.5	2.5	07/08/13 12:32	jlf

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING TRANSFER BLANK

ACZ Sample ID: ***L12893-07***
Date Sampled: *06/20/13 15:40*
Date Received: *06/22/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	07/08/13 12:50	jlf
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	07/08/13 12:50	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			U		mg/L	0.02	0.1	07/11/13 10:17	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U		mg/L	0.02	0.1	06/22/13 15:08	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/22/13 15:08	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		U		mg/L	10	20	06/26/13 11:01	dcw
Sulfate	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	07/08/13 12:50	jlf

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12893***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347052													
WG347052LFB1	LFB	07/05/13 14:23	WI130501-1	30		30.6	mg/L	102	90	110			
L12739-01DUP	DUP	07/05/13 19:03			81.5	81.6	mg/L				0.1	20	RA
L12893-01AS	AS	07/05/13 19:38	WI130501-1	30	11.2	42.3	mg/L	103.7	90	110			
WG347052LFB2	LFB	07/08/13 13:42	WI130501-1	30		32.7	mg/L	109	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG347052													
WG347052LFB1	LFB	07/05/13 14:23	WI130501-1	1.5		1.55	mg/L	103.3	90	110			
L12739-01DUP	DUP	07/05/13 19:03			.55	.55	mg/L				0	20	RA
L12893-01AS	AS	07/05/13 19:38	WI130501-1	1.5	.38	1.95	mg/L	104.7	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346212													
WG346212ICV	ICV	06/22/13 14:50	WI130411-3	2.416		2.445	mg/L	101.2	90	110			
WG346212ICB	ICB	06/22/13 14:51				U	mg/L		-0.06	0.06			
WG346212LFB	LFB	06/22/13 14:55	WI130215-3	2		1.955	mg/L	97.8	90	110			
L12893-02DUP	DUP	06/22/13 14:59			2.37	2.364	mg/L				0.3	20	
L12893-01AS	AS	06/22/13 15:10	WI130215-3	6	2.42	8.478	mg/L	101	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346212													
WG346212ICV	ICV	06/22/13 14:50	WI130411-3	.609		.608	mg/L	99.8	90	110			
WG346212ICB	ICB	06/22/13 14:51				U	mg/L		-0.03	0.03			
WG346212LFB	LFB	06/22/13 14:55	WI130215-3	1		1.005	mg/L	100.5	90	110			
L12893-01AS	AS	06/22/13 14:57	WI130215-3	1	U	.978	mg/L	97.8	90	110			
L12893-02DUP	DUP	06/22/13 14:59			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346443													
WG346443PBW	PBW	06/26/13 10:20				U	mg/L		-20	20			
WG346443LCSW	LCSW	06/26/13 10:22	PCN42882	260		244	mg/L	93.8	80	120			
L12893-03DUP	DUP	06/26/13 10:51			370	372	mg/L				0.5	10	
L12936-02DUP	DUP	06/26/13 11:20			520	518	mg/L				0.4	10	

SPF Water Engineering

ACZ Project ID: ***L12893***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347052													
WG347052LFB1	LFB	07/05/13 14:23	WI130501-1	30		30.5	mg/L	101.7	90	110			
L12739-01DUP	DUP	07/05/13 19:03			57.9	57.9	mg/L				0	20	
L12893-01AS	AS	07/05/13 19:38	WI130501-1	30	18.8	49.6	mg/L	102.7	90	110			
WG347052LFB2	LFB	07/08/13 13:42	WI130501-1	30		32.1	mg/L	107	90	110			

SPF Water Engineering

ACZ Project ID: ***L12893***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12893-01	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12893-02	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12893-03	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12893-04	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12893***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12893-05	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12893-06	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L12893-07	WG347052	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346212	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L12893***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12893
Date Received: 06/22/2013 10:04
Received By: gac
Date Printed: 6/24/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Sample "Spring Equip Blank" was not received and was not entered with the project.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
1815	1.7	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L12893

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM
PO#: Calico 2nd Quarter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSIS REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SHORT-HOLDS-WETCHEM Quote #	
Sagebrush Spring	6/20/13 9:40		1	X	
Government Corral Spring	6/20/13 10:20		1	X	
Prod-1	6/20/13 11:50		1	X	
Grassy Spring Stock Tank	6/20/13 12:50		1	X	
Twin Springs North	6/20/13 15:00		1	X	
Twin Springs South	6/20/13 14:00		1	X	
Spring Equip. Blank	6/20/13 15:30		1	X	sample was not received =>
Spring Transfer Blank	6/20/13 15:40		1	X	removed from the project. AHK 6/22/13

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/21/13 10:50	AHK 6/22/13	1004

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L12893 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12937

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 25, 2013. This project has been assigned to ACZ's project number, L12937. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12937. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L12937-01***
Date Sampled: *06/20/13 09:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 11:36	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 14:14	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 14:52	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP-MS								07/05/13 18:09	las
Total Hot Plate Digestion	M200.2 ICP								07/03/13 9:39	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L12937-01***
Date Sampled: *06/20/13 09:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 7:14	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/04/13 5:27	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:08	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/13 21:28	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0068			mg/L	0.0002	0.001	07/06/13 13:08	msh
Arsenic, total	M200.8 ICP-MS	1	0.0066			mg/L	0.0002	0.001	07/08/13 21:28	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 7:14	jjc
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	07/04/13 5:27	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:08	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:28	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 7:14	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/04/13 5:27	jjc
Boron, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	07/03/13 7:14	jjc
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	07/04/13 5:27	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:08	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:28	msh
Calcium, dissolved	M200.7 ICP	1	44.3			mg/L	0.2	1	07/03/13 7:14	jjc
Calcium, total	M200.7 ICP	1	45.9			mg/L	0.2	1	07/04/13 5:27	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/06/13 13:08	msh
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/08/13 21:28	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00026	B		mg/L	0.00005	0.0003	07/06/13 13:08	msh
Cobalt, total	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	07/08/13 21:28	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:08	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/13 21:28	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:14	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:27	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 7:14	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/05/13 15:47	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:08	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:28	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 7:14	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/04/13 5:27	jjc
Magnesium, dissolved	M200.7 ICP	1	9.6			mg/L	0.2	1	07/03/13 7:14	jjc
Magnesium, total	M200.7 ICP	1	10.0			mg/L	0.2	1	07/04/13 5:27	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	07/06/13 13:08	msh
Manganese, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	07/08/13 21:28	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	06/28/13 12:19	las
Mercury, total	M1631, Atomic Fluorescence	2	1.6			ng/L	0.4	1	07/02/13 13:39	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/06/13 13:08	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/08/13 21:28	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:08	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/13 21:28	msh
Potassium, dissolved	M200.7 ICP	1	4.9			mg/L	0.3	2	07/03/13 7:14	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L12937-01***
Date Sampled: *06/20/13 09:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.9			mg/L	0.3	2	07/04/13 5:27	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:14	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:27	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	07/06/13 13:08	msh
Selenium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	07/08/13 21:28	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:08	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:28	msh
Sodium, dissolved	M200.7 ICP	1	19.3			mg/L	0.3	2	07/03/13 7:14	jjc
Sodium, total	M200.7 ICP	1	20.0			mg/L	0.3	2	07/04/13 5:27	jjc
Strontium, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	07/03/13 7:14	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	07/04/13 5:27	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:08	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:28	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:08	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/13 21:28	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 7:14	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/04/13 5:27	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	07/06/13 13:08	msh
Uranium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	07/08/13 21:28	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0171		*	mg/L	0.0002	0.001	07/06/13 13:08	msh
Vanadium, total	M200.8 ICP-MS	1	0.0191			mg/L	0.0002	0.001	07/08/13 21:28	msh
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/03/13 7:14	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/04/13 5:27	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	151		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	151		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	382		*	umhos/cm	1	10	06/26/13 3:44	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:28	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:58	mpb
Hardness as CaCO3	SM2340B - Calculation		150			mg/L	1	7	07/11/13 11:58	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 13:24	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	07/06/13 0:13	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 14:02	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L12937-02***
Date Sampled: *06/20/13 10:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 11:43	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 14:28	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 15:02	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP-MS								07/05/13 18:21	las
Total Hot Plate Digestion	M200.2 ICP								07/03/13 10:14	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L12937-02***
Date Sampled: *06/20/13 10:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 7:23	jjc
Aluminum, total	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	07/04/13 5:37	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:11	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/13 21:31	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0075			mg/L	0.0002	0.001	07/06/13 13:11	msh
Arsenic, total	M200.8 ICP-MS	1	0.0077			mg/L	0.0002	0.001	07/08/13 21:31	msh
Barium, dissolved	M200.7 ICP	1	0.028			mg/L	0.003	0.02	07/03/13 7:23	jjc
Barium, total	M200.7 ICP	1	0.032			mg/L	0.003	0.02	07/04/13 5:37	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:11	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:31	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 7:23	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/04/13 5:37	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	07/03/13 7:23	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/04/13 5:37	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:11	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:31	msh
Calcium, dissolved	M200.7 ICP	1	47.9			mg/L	0.2	1	07/03/13 7:23	jjc
Calcium, total	M200.7 ICP	1	50.2			mg/L	0.2	1	07/04/13 5:37	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	07/06/13 13:11	msh
Chromium, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.002	07/08/13 21:31	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00025	B		mg/L	0.00005	0.0003	07/06/13 13:11	msh
Cobalt, total	M200.8 ICP-MS	1	0.00022	B		mg/L	0.00005	0.0003	07/08/13 21:31	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:11	msh
Copper, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/08/13 21:31	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:23	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:37	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 7:23	jjc
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	07/05/13 15:56	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:11	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:31	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 7:23	jjc
Lithium, total	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	07/04/13 5:37	jjc
Magnesium, dissolved	M200.7 ICP	1	14.4			mg/L	0.2	1	07/03/13 7:23	jjc
Magnesium, total	M200.7 ICP	1	15.1			mg/L	0.2	1	07/04/13 5:37	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:11	msh
Manganese, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	07/08/13 21:31	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	06/28/13 12:26	las
Mercury, total	M1631, Atomic Fluorescence	2	1.5			ng/L	0.4	1	07/02/13 13:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/06/13 13:11	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	07/08/13 21:31	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:11	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/13 21:31	msh
Potassium, dissolved	M200.7 ICP	1	4.3			mg/L	0.3	2	07/03/13 7:23	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L12937-02***
Date Sampled: *06/20/13 10:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.4			mg/L	0.3	2	07/04/13 5:37	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:23	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:37	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	07/06/13 13:11	msh
Selenium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	07/08/13 21:31	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:11	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:31	msh
Sodium, dissolved	M200.7 ICP	1	18.3			mg/L	0.3	2	07/03/13 7:23	jjc
Sodium, total	M200.7 ICP	1	19.3			mg/L	0.3	2	07/04/13 5:37	jjc
Strontium, dissolved	M200.7 ICP	1	0.25			mg/L	0.01	0.05	07/03/13 7:23	jjc
Strontium, total	M200.7 ICP	1	0.27			mg/L	0.01	0.05	07/04/13 5:37	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:11	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:31	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:11	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/13 21:31	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 7:23	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/04/13 5:37	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	07/06/13 13:11	msh
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	07/08/13 21:31	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0180		*	mg/L	0.0002	0.001	07/06/13 13:11	msh
Vanadium, total	M200.8 ICP-MS	1	0.0203			mg/L	0.0002	0.001	07/08/13 21:31	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 7:23	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/04/13 5:37	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	184		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	184		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	427		*	umhos/cm	1	10	06/26/13 3:54	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:29	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:00	mpb
Hardness as CaCO3	SM2340B - Calculation		179			mg/L	1	7	07/11/13 11:58	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 13:25	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	07/06/13 0:14	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 14:03	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PROD-1

ACZ Sample ID: ***L12937-03***
Date Sampled: *06/20/13 11:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 11:57	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 14:43	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 15:12	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP-MS								07/05/13 18:33	las
Total Hot Plate Digestion	M200.2 ICP								07/03/13 10:26	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PROD-1

ACZ Sample ID: ***L12937-03***
Date Sampled: *06/20/13 11:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 7:26	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/04/13 5:40	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:14	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/13 21:35	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0604			mg/L	0.0002	0.001	07/06/13 13:14	msh
Arsenic, total	M200.8 ICP-MS	1	0.0602			mg/L	0.0002	0.001	07/08/13 21:35	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 7:26	jjc
Barium, total	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	07/04/13 5:40	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:14	msh
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/08/13 21:35	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 7:26	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/04/13 5:40	jjc
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/03/13 7:26	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/04/13 5:40	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:14	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:35	msh
Calcium, dissolved	M200.7 ICP	1	11.7			mg/L	0.2	1	07/03/13 7:26	jjc
Calcium, total	M200.7 ICP	1	11.9			mg/L	0.2	1	07/04/13 5:40	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/06/13 13:14	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/13 21:35	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	07/06/13 13:14	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:35	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:14	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/13 21:35	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:26	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:40	jjc
Iron, dissolved	M200.7 ICP	1	0.05			mg/L	0.02	0.05	07/03/13 7:26	jjc
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	07/05/13 15:59	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:14	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:35	msh
Lithium, dissolved	M200.7 ICP	1	0.16			mg/L	0.02	0.1	07/03/13 7:26	jjc
Lithium, total	M200.7 ICP	1	0.16			mg/L	0.02	0.1	07/04/13 5:40	jjc
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	07/03/13 7:26	jjc
Magnesium, total	M200.7 ICP	1	0.3	B		mg/L	0.2	1	07/04/13 5:40	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0413			mg/L	0.0005	0.003	07/06/13 13:14	msh
Manganese, total	M200.8 ICP-MS	1	0.0449			mg/L	0.0005	0.003	07/08/13 21:35	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	06/28/13 12:33	las
Mercury, total	M1631, Atomic Fluorescence	2	2.1			ng/L	0.4	1	07/02/13 13:52	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0071			mg/L	0.0005	0.003	07/06/13 13:14	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0081			mg/L	0.0005	0.003	07/08/13 21:35	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:14	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/13 21:35	msh
Potassium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.3	2	07/03/13 7:26	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: PROD-1

ACZ Sample ID: ***L12937-03***
Date Sampled: *06/20/13 11:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.5	B		mg/L	0.3	2	07/04/13 5:40	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:26	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:40	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/06/13 13:14	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/08/13 21:35	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:14	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:35	msh
Sodium, dissolved	M200.7 ICP	1	129			mg/L	0.3	2	07/03/13 7:26	jjc
Sodium, total	M200.7 ICP	1	133			mg/L	0.3	2	07/04/13 5:40	jjc
Strontium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	07/03/13 7:26	jjc
Strontium, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	07/04/13 5:40	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:14	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:35	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:14	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/13 21:35	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 7:26	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/04/13 5:40	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:14	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:35	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/06/13 13:14	msh
Vanadium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	07/08/13 21:35	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 7:26	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/04/13 5:40	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	185		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1	11	B	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	196		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	624		*	umhos/cm	1	10	06/26/13 4:03	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:30	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:02	mpb
Hardness as CaCO3	SM2340B - Calculation		31			mg/L	1	7	07/11/13 11:58	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.06	B	*	mg/L	0.05	0.5	07/08/13 13:28	mpb
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	07/06/13 0:15	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 14:04	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L12937-04***
Date Sampled: *06/20/13 12:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 12:11	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 14:50	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 15:22	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP								07/03/13 10:37	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/05/13 18:45	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L12937-04***
Date Sampled: *06/20/13 12:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 7:29	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/04/13 5:43	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:18	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/13 21:45	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0287			mg/L	0.0002	0.001	07/06/13 13:18	msh
Arsenic, total	M200.8 ICP-MS	1	0.0290			mg/L	0.0002	0.001	07/08/13 21:45	msh
Barium, dissolved	M200.7 ICP	1	0.054			mg/L	0.003	0.02	07/03/13 7:29	jjc
Barium, total	M200.7 ICP	1	0.058			mg/L	0.003	0.02	07/04/13 5:43	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:18	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:45	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 7:29	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/04/13 5:43	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	07/03/13 7:29	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/04/13 5:43	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:18	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:45	msh
Calcium, dissolved	M200.7 ICP	1	51.3			mg/L	0.2	1	07/03/13 7:29	jjc
Calcium, total	M200.7 ICP	1	52.8			mg/L	0.2	1	07/04/13 5:43	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/06/13 13:18	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/13 21:45	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00029	B		mg/L	0.00005	0.0003	07/06/13 13:18	msh
Cobalt, total	M200.8 ICP-MS	1	0.00020	B		mg/L	0.00005	0.0003	07/08/13 21:45	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:18	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/13 21:45	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:29	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:43	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 7:29	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/05/13 16:03	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:18	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:45	msh
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/03/13 7:29	jjc
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	07/04/13 5:43	jjc
Magnesium, dissolved	M200.7 ICP	1	10.9			mg/L	0.2	1	07/03/13 7:29	jjc
Magnesium, total	M200.7 ICP	1	11.1			mg/L	0.2	1	07/04/13 5:43	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:18	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/13 21:45	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	06/28/13 12:39	las
Mercury, total	M1631, Atomic Fluorescence	1	1.0			ng/L	0.2	0.5	07/02/13 13:59	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	07/06/13 13:18	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	07/08/13 21:45	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:18	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/13 21:45	msh
Potassium, dissolved	M200.7 ICP	1	5.6			mg/L	0.3	2	07/03/13 7:29	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: GRASSY SPRING STOCK TANK

ACZ Sample ID: ***L12937-04***
Date Sampled: *06/20/13 12:50*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.7			mg/L	0.3	2	07/04/13 5:43	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 7:29	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/04/13 5:43	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0051			mg/L	0.0001	0.0003	07/06/13 13:18	msh
Selenium, total	M200.8 ICP-MS	1	0.0055			mg/L	0.0001	0.0003	07/08/13 21:45	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:18	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/13 21:45	msh
Sodium, dissolved	M200.7 ICP	1	34.1			mg/L	0.3	2	07/03/13 7:29	jjc
Sodium, total	M200.7 ICP	1	35.3			mg/L	0.3	2	07/04/13 5:43	jjc
Strontium, dissolved	M200.7 ICP	1	0.25			mg/L	0.01	0.05	07/03/13 7:29	jjc
Strontium, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	07/04/13 5:43	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:18	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/13 21:45	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:18	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/13 21:45	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 7:29	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/04/13 5:43	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	07/06/13 13:18	msh
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	07/08/13 21:45	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0390		*	mg/L	0.0002	0.001	07/06/13 13:18	msh
Vanadium, total	M200.8 ICP-MS	1	0.0442			mg/L	0.0002	0.001	07/08/13 21:45	msh
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/03/13 7:29	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/04/13 5:43	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	184		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	184		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	481		*	umhos/cm	1	10	06/26/13 4:12	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:32	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:03	mpb
Hardness as CaCO3	SM2340B - Calculation		173			mg/L	1	7	07/11/13 11:59	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 13:29	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/06/13 0:16	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 14:05	mss3

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12937***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393PBW1	PBW	06/25/13 17:26				14.7	mg/L		-20	20			
WG346393LCSW2	LCSW	06/25/13 17:47	WC130625-	820.0001		745.8	mg/L	91	90	110			
WG346393LCSW5	LCSW	06/25/13 21:05	WC130625-	820.0001		784.9	mg/L	95.7	90	110			
WG346393PBW2	PBW	06/25/13 21:13				2.9	mg/L		-20	20			
WG346393LCSW8	LCSW	06/26/13 0:02	WC130625-	820.0001		772.9	mg/L	94.3	90	110			
WG346393PBW3	PBW	06/26/13 0:10				3.1	mg/L		-20	20			
WG346393LCSW11	LCSW	06/26/13 3:26	WC130625-	820.0001		775.5	mg/L	94.6	90	110			
WG346393PBW4	PBW	06/26/13 3:35				2.6	mg/L		-20	20			
L12940-03DUP	DUP	06/26/13 5:17			U	U	mg/L				0	20	RA
WG346393LCSW14	LCSW	06/26/13 6:43	WC130625-	820.0001		797.6	mg/L	97.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.046	mg/L	102.3	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.09	0.09			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1.0011		1.006	mg/L	100.5	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1.0011	.06	1.101	mg/L	104	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1.0011	.06	1.1	mg/L	103.9	85	115	0.09	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		2.01	mg/L	100.5	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.09	0.09			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.066	0.066			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1.0011		1.05	mg/L	104.9	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1.0011	U	1.061	mg/L	106	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1.0011	U	1.059	mg/L	105.8	70	130	0.19	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02		.021	mg/L	105	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0012	0.0012			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.01		.00999	mg/L	99.9	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.01	U	.00921	mg/L	92.1	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.01	U	.00932	mg/L	93.2	70	130	1.19	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.01	U	.00777	mg/L	77.7	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.01	U	.00988	mg/L	98.8	70	130	23.91	20	R4

SPF Water Engineering

ACZ Project ID: ***L12937***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.02		.02098	mg/L	104.9	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0012	0.0012			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00088	0.00088			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.01		.01133	mg/L	113.3	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.01	U	.00952	mg/L	95.2	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.01	U	.00953	mg/L	95.3	70	130	0.1	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05111	mg/L	102.2	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0006	0.0006			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04824	mg/L	96.4	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.0009	.05534	mg/L	108.8	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.0009	.05366	mg/L	105.4	70	130	3.08	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.0287	.0785	mg/L	99.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.0287	.08241	mg/L	107.3	70	130	4.86	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05216	mg/L	104.3	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0006	0.0006			
WG347038LRB	LRB	07/08/13 20:24				.00026	mg/L		-0.00044	0.00044			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.05507	mg/L	110	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0013	.05316	mg/L	103.6	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0013	.05328	mg/L	103.9	70	130	0.23	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.027	mg/L	101.4	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.009	0.009			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	.5		.5056	mg/L	101.1	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	.5	.03	.5342	mg/L	100.8	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	.5	.03	.5383	mg/L	101.7	85	115	0.76	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.9875	mg/L	99.4	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.009	0.009			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.0066	0.0066			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	.5		.5144	mg/L	102.9	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	.5	.004	.5127	mg/L	101.7	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	.5	.004	.5158	mg/L	102.4	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04599	mg/L	92	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.0461	mg/L	92	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.0501	.00012	.04733	mg/L	94.2	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.0501	.00012	.0481	mg/L	95.8	70	130	1.61	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	U	.04598	mg/L	91.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	U	.04657	mg/L	93	70	130	1.27	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.0506	mg/L	101.2	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.00015	0.00015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00011	0.00011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.0501		.05606	mg/L	111.9	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.0501	.00012	.0444	mg/L	88.4	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.0501	.00012	.04523	mg/L	90	70	130	1.85	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.002	mg/L	100.1	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.12	0.12			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1		1.013	mg/L	101.3	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1	U	1.04	mg/L	104	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1	U	1.017	mg/L	101.7	85	115	2.24	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.999	mg/L	100	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.12	0.12			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.088	0.088			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1		1.037	mg/L	103.7	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1	U	1.05	mg/L	105	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1	U	1.034	mg/L	103.4	70	130	1.54	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.037	mg/L	101.9	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.03	0.03			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	.5005		.515	mg/L	102.9	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	.5005	.01	.524	mg/L	102.7	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	.5005	.01	.52	mg/L	101.9	85	115	0.77	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		2.028	mg/L	101.4	95	105			
WG346993ICB	ICB	07/04/13 5:09				.011	mg/L		-0.03	0.03			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.022	0.022			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	.5005		.538	mg/L	107.5	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	.5005	.05	.584	mg/L	106.7	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	.5005	.05	.587	mg/L	107.3	70	130	0.51	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05051	mg/L	101	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.049	mg/L	97.8	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.0501	U	.0482	mg/L	96.2	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.0501	U	.049	mg/L	97.8	70	130	1.65	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	U	.04734	mg/L	94.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	U	.04847	mg/L	96.7	70	130	2.36	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05118	mg/L	102.4	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.0501		.05162	mg/L	103	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.0501	.0001	.04889	mg/L	97.4	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.0501	.0001	.04868	mg/L	97	70	130	0.43	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	100		99.01	mg/L	99	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.6	0.6			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	67.95918		66.48	mg/L	97.8	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	67.95918	10.3	79.28	mg/L	101.5	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	67.95918	10.3	79.64	mg/L	102	85	115	0.45	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	100		98.37	mg/L	98.4	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.6	0.6			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.44	0.44			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	67.95918		70.78	mg/L	104.2	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	67.95918	45.9	115.7	mg/L	102.7	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	67.95918	45.9	115.9	mg/L	103	70	130	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04842	mg/L	96.8	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04804	mg/L	96	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	U	.04598	mg/L	91.9	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	U	.0456	mg/L	91.1	70	130	0.83	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04442	mg/L	88.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04599	mg/L	91.9	70	130	3.47	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.04928	mg/L	98.6	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0015	0.0015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.0011	0.0011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04884	mg/L	97.6	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0013	.04858	mg/L	94.5	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0013	.04933	mg/L	96	70	130	1.53	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04615	mg/L	92.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04535	mg/L	90.6	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.00037	.03979	mg/L	78.8	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.00037	.04157	mg/L	82.3	70	130	4.38	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.00029	.04305	mg/L	85.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.00029	.04378	mg/L	86.9	70	130	1.68	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.04862	mg/L	97.2	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.00015	0.00015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00011	0.00011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04695	mg/L	93.8	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.00099	.04767	mg/L	93.3	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.00099	.04777	mg/L	93.5	70	130	0.21	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393LCSW1	LCSW	06/25/13 17:27	PCN41764	1408.8		1432.5	umhos/cm	101.7	90	110			
WG346393LCSW4	LCSW	06/25/13 20:53	PCN41764	1408.8		1403.8	umhos/cm	99.6	90	110			
WG346393LCSW7	LCSW	06/25/13 23:51	PCN41764	1408.8		1375.1	umhos/cm	97.6	90	110			
WG346393LCSW10	LCSW	06/26/13 3:16	PCN41764	1408.8		1350.5	umhos/cm	95.9	90	110			
L12940-03DUP	DUP	06/26/13 5:17			U	U	umhos/cm				0	20	RA
WG346393LCSW13	LCSW	06/26/13 6:31	PCN41764	1408.8		1332.1	umhos/cm	94.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04767	mg/L	95.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04661	mg/L	93.1	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.0013	.04529	mg/L	87.9	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.0013	.04516	mg/L	87.6	70	130	0.29	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04193	mg/L	83.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04359	mg/L	87.1	70	130	3.88	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.04936	mg/L	98.7	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0015	0.0015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.0011	0.0011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.0494	mg/L	98.7	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0042	.05084	mg/L	93.2	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0042	.05141	mg/L	94.3	70	130	1.11	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346907													
WG346844LRB	LRB	07/02/13 17:01				U	mg/L		-0.003	0.003			
WG346844LFB	LFB	07/02/13 17:02	WI130621-2	.2		.1955	mg/L	97.8	90	110			
L12909-03DUP	DUP	07/02/13 17:05			.003	.0034	mg/L				12.5	20	RA
L12937-02DUP	DUP	07/02/13 17:29			U	U	mg/L				0	20	RA
L12937-03LFM	LFM	07/02/13 17:31	WI130621-2	.2	U	.1966	mg/L	98.3	90	110			
L12909-04LFM	LFM	07/02/13 17:42	WI130621-2	.2	.71	.912	mg/L	101	90	110			

SPF Water Engineering

ACZ Project ID: ***L12937***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346908													
WG346871LRB	LRB	07/02/13 17:57				U	mg/L		-0.003	0.003			
WG346871LFB	LFB	07/02/13 17:57	WI130621-4	.2		.2004	mg/L	100.2	90	110			
L12937-01DUP	DUP	07/02/13 17:59			U	U	mg/L				0	20	RA
L12937-02LFM	LFM	07/02/13 18:01	WI130621-4	.2	U	.1915	mg/L	95.8	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.07	mg/L	103.5	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.3	0.3			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1		1.02	mg/L	102	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1	U	1.04	mg/L	104	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1	U	1.04	mg/L	104	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		2.01	mg/L	100.5	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.3	0.3			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.22	0.22			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1		1.04	mg/L	104	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1	U	1.02	mg/L	102	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1	U	1.02	mg/L	102	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.008	mg/L	100.4	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.06	0.06			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1		1.025	mg/L	102.5	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1	.1	1.068	mg/L	96.8	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1	.1	1.077	mg/L	97.7	85	115	0.84	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347043													
WG347043ICV	ICV	07/05/13 15:23	II130514-1	2		1.995	mg/L	99.8	95	105			
WG347043ICB	ICB	07/05/13 15:29				U	mg/L		-0.06	0.06			
WG346930LRB	LRB	07/05/13 15:41				U	mg/L		-0.044	0.044			
WG346930LFB	LFB	07/05/13 15:44	II130621-2	1		1.075	mg/L	107.5	85	115			
L12937-01LFM	LFM	07/05/13 15:50	II130621-2	1	U	1.057	mg/L	105.7	70	130			
L12937-01LFMD	LFMD	07/05/13 15:53	II130621-2	1	U	1.065	mg/L	106.5	70	130	0.75	20	

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ACZ Project ID: ***L12937***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04868	mg/L	97.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04573	mg/L	91.4	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	U	.04434	mg/L	88.6	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	U	.04503	mg/L	90	70	130	1.54	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04513	mg/L	90.2	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04581	mg/L	91.5	70	130	1.5	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05313	mg/L	106.3	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04925	mg/L	98.4	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0018	.05196	mg/L	100.2	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0018	.05216	mg/L	100.6	70	130	0.38	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.04	mg/L	102	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.06	0.06			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1		1.004	mg/L	100.4	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1	U	1.006	mg/L	100.6	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1	U	.999	mg/L	99.9	85	115	0.7	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.994	mg/L	99.7	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.06	0.06			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.044	0.044			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1		1.004	mg/L	100.4	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1	U	1.023	mg/L	102.3	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1	U	1.022	mg/L	102.2	70	130	0.1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	100		98.75	mg/L	98.8	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.6	0.6			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	49.99941		47.24	mg/L	94.5	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	49.99941	3	52.37	mg/L	98.7	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	49.99941	3	52.58	mg/L	99.2	85	115	0.4	20	

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ACZ Project ID: ***L12937***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	100		98.35	mg/L	98.4	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.6	0.6			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.44	0.44			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	49.99941		50.6	mg/L	101.2	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	49.99941	10	60.11	mg/L	100.2	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	49.99941	10	60.32	mg/L	100.6	70	130	0.35	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05072	mg/L	101.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04906	mg/L	98	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.0084	.05097	mg/L	85.1	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.0084	.05312	mg/L	89.4	70	130	4.13	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04673	mg/L	93.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04795	mg/L	95.8	70	130	2.58	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.0491	mg/L	98.2	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0015	0.0015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.0011	0.0011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04614	mg/L	92.2	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0686	.1135	mg/L	89.7	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0686	.1155	mg/L	93.7	70	130	1.75	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346620													
WG346620CCV1	CCV	06/28/13 8:59	HG130517-4	10		11	ng/L	110	76.5	123.4			
WG346620CCB1	CCB	06/28/13 9:06				U	ng/L		-0.5	0.5			
WG346620PQV	PQV	06/28/13 9:12	HG130517-6	.5		.61	ng/L	122	70	130			
WG346620LFB	LFB	06/28/13 9:19	HG130517-5	2		2.36	ng/L	118	71	125			
WG346620CCV2	CCV	06/28/13 10:19	HG130517-4	10		11.35	ng/L	113.5	76.5	123.4			
WG346620CCB2	CCB	06/28/13 10:26				U	ng/L		-0.5	0.5			
WG346620CCV3	CCV	06/28/13 11:13	HG130517-4	10		11.14	ng/L	111.4	76.5	123.4			
WG346620CCB3	CCB	06/28/13 11:19				U	ng/L		-0.5	0.5			
WG346620CCV4	CCV	06/28/13 12:06	HG130517-4	10		10.56	ng/L	105.6	76.5	123.4			
WG346620CCB4	CCB	06/28/13 12:13				U	ng/L		-0.5	0.5			
L12937-04MS	MS	06/28/13 12:46	HG130517-5	2	.6	2.54	ng/L	97	71	125			
L12937-04MSD	MSD	06/28/13 12:53	HG130517-5	2	.6	3.01	ng/L	120.5	71	125	16.94	24	
WG346620CCV5	CCV	06/28/13 12:59	HG130517-4	10		10.14	ng/L	101.4	76.5	123.4			
WG346620CCB5	CCB	06/28/13 13:06				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346803													
WG346803CCV1	CCV	07/02/13 11:00	HG130517-4	10		11.8	ng/L	118	76.5	123.4			
WG346803CCB1	CCB	07/02/13 11:07				U	ng/L		-0.5	0.5			
WG346803PQV	PQV	07/02/13 11:14	HG130517-6	.5		.49	ng/L	98	70	130			
WG346803LFB	LFB	07/02/13 11:20	HG130517-5	2		2.31	ng/L	115.5	71	125			
WG346803CCV2	CCV	07/02/13 12:26	HG130517-4	10		10.97	ng/L	109.7	76.5	123.4			
WG346803CCB2	CCB	07/02/13 12:32				U	ng/L		-0.5	0.5			
WG346803CCV3	CCV	07/02/13 13:26	HG130517-4	10		11.09	ng/L	110.9	76.5	123.4			
WG346803CCB3	CCB	07/02/13 13:32				U	ng/L		-0.5	0.5			
L12940-02MS	MS	07/02/13 14:19	HG2XPREP	8	2.1	5.97	ng/L	96.8	71	125			
L12940-02MSD	MSD	07/02/13 14:26	HG2XPREP	8	2.1	5.91	ng/L	95.3	71	125	1.01	24	
WG346803CCV4	CCV	07/02/13 14:32	HG130517-4	10		10.64	ng/L	106.4	76.5	123.4			
WG346803CCB4	CCB	07/02/13 14:39				.26	ng/L		-0.5	0.5			
WG346803CCV5	CCV	07/02/13 15:40	HG130517-4	10		9.17	ng/L	91.7	76.5	123.4			
WG346803CCB5	CCB	07/02/13 15:46				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L12937***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02006		.01845	mg/L	92	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05		.04449	mg/L	89	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05	.0006	.04384	mg/L	86.5	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05	.0006	.04462	mg/L	88	70	130	1.76	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05	.0032	.04691	mg/L	87.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05	.0032	.04858	mg/L	90.8	70	130	3.5	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.02006		.01938	mg/L	96.6	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0015	0.0015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.0011	0.0011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05		.047	mg/L	94	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05	.0005	.04942	mg/L	97.8	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05	.0005	.04905	mg/L	97.1	70	130	0.75	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05028	mg/L	100.6	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0018	0.0018			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04822	mg/L	96.3	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.0017	.0473	mg/L	91.1	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.0017	.04716	mg/L	90.8	70	130	0.3	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04278	mg/L	85.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04483	mg/L	89.6	70	130	4.68	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05062	mg/L	101.2	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0018	0.0018			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00132	0.00132			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04958	mg/L	99.1	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0014	.0492	mg/L	95.5	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0014	.04979	mg/L	96.7	70	130	1.19	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347124													
WG347124ICV	ICV	07/08/13 12:58	WI121105-5	1.003		.973	mg/L	97	90	110			
WG347124ICB	ICB	07/08/13 13:01				U	mg/L		-0.15	0.15			
WG347124LFB1	LFB	07/08/13 13:02	WI121218-3	1		.98	mg/L	98	90	110			
L12913-05AS	AS	07/08/13 13:19	WI121218-3	1	.08	1.098	mg/L	101.8	90	110			
L12936-01DUP	DUP	07/08/13 13:21			.62	.61	mg/L				1.6	20	
WG347124LFB2	LFB	07/08/13 13:33	WI121218-3	1		.993	mg/L	99.3	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393LCSW3	LCSW	06/25/13 17:51	PCN40853	6		5.99	units	99.8	98	102			
WG346393LCSW6	LCSW	06/25/13 21:08	PCN40853	6		6.01	units	100.2	98	102			
WG346393LCSW9	LCSW	06/26/13 0:05	PCN40853	6		6.01	units	100.2	98	102			
WG346393LCSW12	LCSW	06/26/13 3:30	PCN40853	6		6	units	100	98	102			
L12940-03DUP	DUP	06/26/13 5:17			6.2	5.99	units				3.4	20	
WG346393LCSW15	LCSW	06/26/13 6:47	PCN40853	6		6.01	units	100.2	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347081													
WG347081ICV	ICV	07/05/13 22:40	WI130620-3	.65228		.633	mg/L	97	90	110			
WG347081ICB	ICB	07/05/13 22:42				U	mg/L		-0.03	0.03			
WG347083													
WG347057LRB	LRB	07/05/13 23:58				U	mg/L		-0.03	0.03			
WG347057LFB	LFB	07/06/13 0:00	WI130705-2	.5		.478	mg/L	95.6	90	110			
L12903-01LFM	LFM	07/06/13 0:02	WI130705-2	.5	.01	.48	mg/L	94	90	110			
L12903-02DUP	DUP	07/06/13 0:04			.03	.025	mg/L				18.2	20	RA
L12937-04LFM	LFM	07/06/13 0:18	WI130705-2	.5	.03	.502	mg/L	94.4	90	110			
L12940-01DUP	DUP	07/06/13 0:20			.03	.028	mg/L				6.9	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	20		20.13	mg/L	100.7	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.9	0.9			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	99.97161		94.89	mg/L	94.9	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	99.97161	4.3	103.1	mg/L	98.8	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	99.97161	4.3	103.7	mg/L	99.4	85	115	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	20		19.98	mg/L	99.9	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.9	0.9			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.66	0.66			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	99.97161		100.8	mg/L	100.8	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	99.97161	4.9	105.6	mg/L	100.7	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	99.97161	4.9	105.8	mg/L	100.9	70	130	0.19	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346587													
WG346587PBW	PBW	06/27/13 14:00				U	mg/L		-15	15			
WG346587LCSW	LCSW	06/27/13 14:01	PCN42881	160		152	mg/L	95	80	120			
L12968-01DUP	DUP	06/27/13 14:11			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2	mg/L	100	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.3	0.3			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1.0009		1.03	mg/L	102.9	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1.0009	U	1.03	mg/L	102.9	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1.0009	U	1.03	mg/L	102.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.96	mg/L	98	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.3	0.3			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.22	0.22			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1.0009		1.03	mg/L	102.9	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1.0009	U	1.03	mg/L	102.9	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1.0009	U	1.03	mg/L	102.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05067	mg/L	101.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04939	mg/L	98.7	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	.0001	.04984	mg/L	99.4	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	.0001	.04966	mg/L	99	70	130	0.36	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.0051	.05182	mg/L	93.3	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.0051	.05415	mg/L	98	70	130	4.4	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05212	mg/L	104.2	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.0565	mg/L	112.9	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	.0001	.048	mg/L	95.7	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	.0001	.0485	mg/L	96.7	70	130	1.04	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02002		.02001	mg/L	100	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.01001		.009544	mg/L	95.3	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.01001	U	.009057	mg/L	90.5	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.01001	U	.009041	mg/L	90.3	70	130	0.18	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.01001	U	.007238	mg/L	72.3	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.01001	U	.009031	mg/L	90.2	70	130	22.04	20	R4

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.02002		.02018	mg/L	100.8	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.00015	0.00015			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00011	0.00011			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.01001		.009797	mg/L	97.9	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.01001	U	.009821	mg/L	98.1	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.01001	U	.009683	mg/L	96.7	70	130	1.42	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	100		100.02	mg/L	100	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.9	0.9			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	100.0416		94.88	mg/L	94.8	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	100.0416	4.6	103.2	mg/L	98.6	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	100.0416	4.6	104.1	mg/L	99.5	85	115	0.87	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	100		99.68	mg/L	99.7	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.9	0.9			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.66	0.66			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	100.0416		100.1	mg/L	100.1	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	100.0416	20	120.3	mg/L	100.3	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	100.0416	20	120.4	mg/L	100.4	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.05	mg/L	102.5	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.03	0.03			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	.5		.483	mg/L	96.6	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	.5	.09	.584	mg/L	98.8	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	.5	.09	.588	mg/L	99.6	85	115	0.68	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		2.005	mg/L	100.3	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.03	0.03			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.022	0.022			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	.5		.5	mg/L	100	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	.5	.21	.697	mg/L	97.4	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	.5	.21	.699	mg/L	97.8	70	130	0.29	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05172	mg/L	103.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04679	mg/L	93.5	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	U	.04584	mg/L	91.6	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	U	.04652	mg/L	92.9	70	130	1.47	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04676	mg/L	93.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04733	mg/L	94.6	70	130	1.21	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05338	mg/L	106.8	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04932	mg/L	98.5	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	U	.05054	mg/L	101	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	U	.05123	mg/L	102.4	70	130	1.36	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05015		.04846	mg/L	96.6	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04316	mg/L	86.2	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05005	U	.04125	mg/L	82.4	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05005	U	.04174	mg/L	83.4	70	130	1.18	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04164	mg/L	83.2	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04274	mg/L	85.4	70	130	2.61	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05015		.04999	mg/L	99.7	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05005		.04642	mg/L	92.7	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05005	U	.03853	mg/L	77	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05005	U	.03788	mg/L	75.7	70	130	1.7	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		2.0245	mg/L	101.2	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.015	0.015			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	1		1.014	mg/L	101.4	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	1	U	1.021	mg/L	102.1	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	1	U	1.017	mg/L	101.7	85	115	0.39	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.968	mg/L	98.4	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.015	0.015			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.011	0.011			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	1		1.012	mg/L	101.2	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	1	U	1.006	mg/L	100.6	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	1	U	1.003	mg/L	100.3	70	130	0.3	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05306	mg/L	106.1	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05		.05019	mg/L	100.4	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.05	.0007	.0495	mg/L	97.6	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.05	.0007	.05072	mg/L	100	70	130	2.43	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05	.0022	.05311	mg/L	101.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05	.0022	.05417	mg/L	103.9	70	130	1.98	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.05324	mg/L	106.5	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0003	0.0003			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00022	0.00022			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.05		.04923	mg/L	98.5	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.05	.0001	.04952	mg/L	98.8	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.05	.0001	.04997	mg/L	99.7	70	130	0.9	20	

SPF Water Engineering

ACZ Project ID: ***L12937***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04786	mg/L	95.7	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0006	0.0006			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.04841	mg/L	96.6	85	115			
L12795-10AS	AS	07/06/13 12:44	MS130614-1	.0501	.0007	.04854	mg/L	95.5	70	130			
L12795-10ASD	ASD	07/06/13 12:47	MS130614-1	.0501	.0007	.04783	mg/L	94.1	70	130	1.47	20	
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	.039	.08494	mg/L	91.7	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	.039	.08793	mg/L	97.7	70	130	3.46	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347154													
WG347154ICV	ICV	07/08/13 19:51	MS130416-2	.05		.04839	mg/L	96.8	90	110			
WG347154ICB	ICB	07/08/13 19:54				U	mg/L		-0.0006	0.0006			
WG347038LRB	LRB	07/08/13 20:24				U	mg/L		-0.00044	0.00044			
WG347038LFB	LFB	07/08/13 20:27	MS130614-1	.0501		.0487	mg/L	97.2	85	115			
L13005-01LFM	LFM	07/08/13 21:55	MS130614-1	.0501	.0088	.05787	mg/L	97.9	70	130			
L13005-01LFMD	LFMD	07/08/13 21:58	MS130614-1	.0501	.0088	.05812	mg/L	98.4	70	130	0.43	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346895													
WG346895ICV	ICV	07/03/13 5:51	II130510-1	2		1.953	mg/L	97.7	95	105			
WG346895ICB	ICB	07/03/13 5:57				U	mg/L		-0.03	0.03			
WG346895LFB	LFB	07/03/13 6:09	II130621-2	.5		.478	mg/L	95.6	85	115			
L12911-01AS	AS	07/03/13 7:05	II130621-2	.5	U	.506	mg/L	101.2	85	115			
L12911-01ASD	ASD	07/03/13 7:08	II130621-2	.5	U	.51	mg/L	102	85	115	0.79	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346993													
WG346993ICV	ICV	07/04/13 5:03	II130514-1	2		1.93	mg/L	96.5	95	105			
WG346993ICB	ICB	07/04/13 5:09				U	mg/L		-0.03	0.03			
WG346930LRB	LRB	07/04/13 5:21				U	mg/L		-0.022	0.022			
WG346930LFB	LFB	07/04/13 5:24	II130621-2	.5		.514	mg/L	102.8	85	115			
L12937-01LFM	LFM	07/04/13 5:30	II130621-2	.5	U	.506	mg/L	101.2	70	130			
L12937-01LFMD	LFMD	07/04/13 5:34	II130621-2	.5	U	.505	mg/L	101	70	130	0.2	20	

SPF Water Engineering ACZ Project ID: ***L12937***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12937-01	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346587	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12937***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12937-02	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346587	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12937***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12937-03	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
	WG347154	Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG347071	Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346587	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12937***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12937-04	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346587	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12937
Date Received: 06/25/2013 10:33
Received By: mtb
Date Printed: 6/26/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3425	13.6	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L12937

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW							
Sagebrush Spring	6/20/13 9:40		7	X							
Government Corral Spring	6/20/13 10:20		7	X							
Prod-1	6/20/13 11:50		7	X							
Grassy Spring Stock Tank	6/20/13 12:50		7	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/21/13 10:00	[illegible]	6.25.13 1033

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L12937 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 15, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L12940

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 25, 2013. This project has been assigned to ACZ's project number, L12940. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L12940. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 14, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L12940-01***
Date Sampled: *06/20/13 14:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 12:18	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 14:57	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 15:43	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP								07/02/13 16:03	jjc/scp
Total Hot Plate Digestion	M200.2 ICP-MS								07/08/13 15:04	las

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L12940-01***
Date Sampled: *06/20/13 14:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 17:23	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 13:55	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:28	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/13 22:26	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0434			mg/L	0.0002	0.001	07/06/13 13:28	msh
Arsenic, total	M200.8 ICP-MS	1	0.0440			mg/L	0.0002	0.001	07/10/13 22:26	msh
Barium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	07/03/13 17:23	aeb
Barium, total	M200.7 ICP	1	0.007	B		mg/L	0.003	0.02	07/03/13 13:55	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:28	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:26	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 17:23	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 13:55	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/03/13 17:23	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/03/13 13:55	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:28	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:26	msh
Calcium, dissolved	M200.7 ICP	1	26.6			mg/L	0.2	1	07/03/13 17:23	aeb
Calcium, total	M200.7 ICP	1	26.3			mg/L	0.2	1	07/03/13 13:55	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	07/06/13 13:28	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	07/10/13 22:26	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	07/06/13 13:28	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/10/13 22:26	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:28	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/10/13 22:26	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:23	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 13:55	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 17:23	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 13:55	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:28	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:26	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 17:23	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 13:55	jjc
Magnesium, dissolved	M200.7 ICP	1	15.0			mg/L	0.2	1	07/03/13 17:23	aeb
Magnesium, total	M200.7 ICP	1	14.9			mg/L	0.2	1	07/03/13 13:55	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	07/06/13 13:28	msh
Manganese, total	M200.8 ICP-MS	1	0.0065			mg/L	0.0005	0.003	07/10/13 22:26	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U	*	ng/L	0.2	0.5	07/09/13 14:12	las
Mercury, total	M1631, Atomic Fluorescence	2	1.9			ng/L	0.4	1	07/02/13 14:06	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0092			mg/L	0.0005	0.003	07/06/13 13:28	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0098			mg/L	0.0005	0.003	07/10/13 22:26	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:28	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/13 22:26	msh
Potassium, dissolved	M200.7 ICP	1	9.1			mg/L	0.3	2	07/03/13 17:23	aeb

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L12940-01***
Date Sampled: *06/20/13 14:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.9			mg/L	0.3	2	07/03/13 13:55	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:23	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 13:55	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	07/06/13 13:28	msh
Selenium, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0003	07/10/13 22:26	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:28	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:26	msh
Sodium, dissolved	M200.7 ICP	1	42.7			mg/L	0.3	2	07/03/13 17:23	aeb
Sodium, total	M200.7 ICP	1	42.5			mg/L	0.3	2	07/03/13 13:55	jjc
Strontium, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/03/13 17:23	aeb
Strontium, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/03/13 13:55	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:28	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:26	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:28	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/13 22:26	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 17:23	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 13:55	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0005	07/06/13 13:28	msh
Uranium, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0005	07/10/13 22:26	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0427		*	mg/L	0.0002	0.001	07/06/13 13:28	msh
Vanadium, total	M200.8 ICP-MS	1	0.0436		*	mg/L	0.0002	0.001	07/10/13 22:26	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:23	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 13:55	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	174		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1	3	B	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	178		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	450		*	umhos/cm	1	10	06/26/13 4:56	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:35	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:04	mpb
Hardness as CaCO3	SM2340B - Calculation		128			mg/L	1	7	07/15/13 10:25	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 13:32	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/06/13 0:19	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 12:14	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L12940-02***
Date Sampled: *06/20/13 15:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 12:25	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 15:04	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 16:03	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP-MS								07/08/13 15:16	las
Total Hot Plate Digestion	M200.2 ICP								07/02/13 16:38	jjc/scp

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L12940-02***
Date Sampled: *06/20/13 15:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 17:32	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 14:04	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:32	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/13 22:29	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0441			mg/L	0.0002	0.001	07/06/13 13:32	msh
Arsenic, total	M200.8 ICP-MS	1	0.0479			mg/L	0.0002	0.001	07/10/13 22:29	msh
Barium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.003	0.02	07/03/13 17:32	aeb
Barium, total	M200.7 ICP	1	0.012	B		mg/L	0.003	0.02	07/03/13 14:04	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:32	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:29	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 17:32	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 14:04	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/03/13 17:32	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/03/13 14:04	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:32	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:29	msh
Calcium, dissolved	M200.7 ICP	1	25.6			mg/L	0.2	1	07/03/13 17:32	aeb
Calcium, total	M200.7 ICP	1	25.1			mg/L	0.2	1	07/03/13 14:04	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/06/13 13:32	msh
Chromium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.002	07/10/13 22:29	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	07/06/13 13:32	msh
Cobalt, total	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	07/10/13 22:29	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:32	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/10/13 22:29	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:32	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:04	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 17:32	aeb
Iron, total	M200.7 ICP	1	0.05			mg/L	0.02	0.05	07/03/13 14:04	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:32	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:29	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 17:32	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 14:04	jjc
Magnesium, dissolved	M200.7 ICP	1	15.0			mg/L	0.2	1	07/03/13 17:32	aeb
Magnesium, total	M200.7 ICP	1	14.7			mg/L	0.2	1	07/03/13 14:04	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0809			mg/L	0.0005	0.003	07/06/13 13:32	msh
Manganese, total	M200.8 ICP-MS	1	0.1010			mg/L	0.0005	0.003	07/10/13 22:29	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U	*	ng/L	0.2	0.5	07/09/13 15:50	las
Mercury, total	M1631, Atomic Fluorescence	2	2.1			ng/L	0.4	1	07/02/13 14:12	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	07/06/13 13:32	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0107			mg/L	0.0005	0.003	07/10/13 22:29	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:32	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/13 22:29	msh
Potassium, dissolved	M200.7 ICP	1	9.0			mg/L	0.3	2	07/03/13 17:32	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L12940-02***
Date Sampled: *06/20/13 15:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.8			mg/L	0.3	2	07/03/13 14:04	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:32	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:04	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	07/06/13 13:32	msh
Selenium, total	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	07/10/13 22:29	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:32	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:29	msh
Sodium, dissolved	M200.7 ICP	1	45.8			mg/L	0.3	2	07/03/13 17:32	aeb
Sodium, total	M200.7 ICP	1	45.1			mg/L	0.3	2	07/03/13 14:04	jjc
Strontium, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/03/13 17:32	aeb
Strontium, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/03/13 14:04	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:32	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:29	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:32	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/13 22:29	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 17:32	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 14:04	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	07/06/13 13:32	msh
Uranium, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0001	0.0005	07/10/13 22:29	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0370		*	mg/L	0.0002	0.001	07/06/13 13:32	msh
Vanadium, total	M200.8 ICP-MS	1	0.0412		*	mg/L	0.0002	0.001	07/10/13 22:29	msh
Zinc, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	07/03/13 17:32	aeb
Zinc, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	07/03/13 14:04	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	169		*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1	169		*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1	449		*	umhos/cm	1	10	06/26/13 5:06	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:36	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:04	mpb
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	1	7	07/15/13 10:26	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 13:35	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.07		*	mg/L	0.01	0.05	07/06/13 0:21	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 12:15	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING EQUIP BLANK

ACZ Sample ID: ***L12940-03***
Date Sampled: *06/20/13 15:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 12:32	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 15:12	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 16:13	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP								07/02/13 16:49	jjc/scp
Total Hot Plate Digestion	M200.2 ICP-MS								07/08/13 15:28	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING EQUIP BLANK

ACZ Sample ID: ***L12940-03***
Date Sampled: *06/20/13 15:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 17:35	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 14:07	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:42	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/13 22:33	msh
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/06/13 13:42	msh
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/10/13 22:33	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 17:35	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 14:07	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:42	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:33	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 17:35	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 14:07	jjc
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:35	aeb
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:07	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:42	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:33	msh
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 17:35	aeb
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 14:07	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/06/13 13:42	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/10/13 22:33	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	07/06/13 13:42	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:33	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/06/13 13:42	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/10/13 22:33	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:35	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:07	jjc
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	07/03/13 17:35	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 14:07	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:42	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:33	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 17:35	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 14:07	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 17:35	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 14:07	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:42	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/13 22:33	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U	*	ng/L	0.2	0.5	07/09/13 14:05	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/02/13 15:20	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:42	msh
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/13 22:33	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:42	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/13 22:33	msh
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 17:35	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING EQUIP BLANK

ACZ Sample ID: ***L12940-03***
Date Sampled: *06/20/13 15:20*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 14:07	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:35	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:07	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/06/13 13:42	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/10/13 22:33	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:42	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:33	msh
Sodium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 17:35	aeb
Sodium, total	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 14:07	jjc
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:35	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:07	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:42	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:33	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:42	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/13 22:33	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 17:35	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 14:07	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:42	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:33	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/06/13 13:42	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/11/13 22:19	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:35	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:07	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1		U	*	umhos/cm	1	10	06/26/13 5:11	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:37	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:07	mpb
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	1	7	07/15/13 10:26	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 14:04	mpb
pH (lab)	SM4500H+ B									
pH		1	6.2	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	07/06/13 0:22	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 12:16	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING TRANSFER BLANK

ACZ Sample ID: ***L12940-04***
Date Sampled: *06/20/13 15:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/13 12:39	mla
Cyanide, WAD	SM4500-CN I- distillation								07/02/13 15:19	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/05/13 16:24	mpb/bsu
Total Hot Plate Digestion	M200.2 ICP-MS								07/08/13 15:40	las
Total Hot Plate Digestion	M200.2 ICP								07/02/13 17:01	jjc/scp

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING TRANSFER BLANK

ACZ Sample ID: ***L12940-04***
Date Sampled: *06/20/13 15:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.03	0.2	07/03/13 17:38	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/13 14:11	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/06/13 13:45	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/13 22:36	msh
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/06/13 13:45	msh
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/10/13 22:36	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 17:38	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/13 14:11	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:45	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:36	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 17:38	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/13 14:11	jjc
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:38	aeb
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:11	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:45	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:36	msh
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 17:38	aeb
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 14:11	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/06/13 13:45	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/10/13 22:36	msh
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/06/13 13:45	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:36	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.003	07/06/13 13:45	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/10/13 22:36	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:38	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:11	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 17:38	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/13 14:11	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:45	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:36	msh
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 17:38	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/03/13 14:11	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 17:38	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/13 14:11	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:45	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/13 22:36	msh
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/02/13 15:26	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/06/13 13:45	msh
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/13 22:36	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/06/13 13:45	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/13 22:36	msh
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 17:38	aeb
Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 14:11	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SPRING TRANSFER BLANK

ACZ Sample ID: ***L12940-04***
Date Sampled: *06/20/13 15:40*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 17:38	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/13 14:11	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/06/13 13:45	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/10/13 22:36	msh
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/06/13 13:45	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/13 22:36	msh
Sodium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 17:38	aeb
Sodium, total	M200.7 ICP	1		U		mg/L	0.3	2	07/03/13 14:11	jjc
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:38	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:11	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:45	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:36	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/06/13 13:45	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/13 22:36	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 17:38	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/13 14:11	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/06/13 13:45	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/13 22:36	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/06/13 13:45	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/11/13 22:22	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 17:38	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/13 14:11	jjc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Total Alkalinity		1		U	*	mg/L	2	20	06/26/13 0:00	khw
Conductivity @25C	SM2510B	1		U	*	umhos/cm	1	10	06/26/13 5:23	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 17:37	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/13 18:08	mpb
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	1	7	07/15/13 10:26	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.09	B	*	mg/L	0.05	0.5	07/08/13 13:41	mpb
pH (lab)	SM4500H+ B									
pH		1	5.9	H	*	units	0.1	0.1	06/26/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	06/26/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	07/06/13 0:26	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/27/13 12:18	mss3

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: HG TRIP BLANK

ACZ Sample ID: ***L12940-05***
Date Sampled: *06/20/13 16:00*
Date Received: *06/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/02/13 15:33	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L12940***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393PBW1	PBW	06/25/13 17:26				14.7	mg/L		-20	20			
WG346393LCSW2	LCSW	06/25/13 17:47	WC130625-	820.0001		745.8	mg/L	91	90	110			
WG346393LCSW5	LCSW	06/25/13 21:05	WC130625-	820.0001		784.9	mg/L	95.7	90	110			
WG346393PBW2	PBW	06/25/13 21:13				2.9	mg/L		-20	20			
WG346393LCSW8	LCSW	06/26/13 0:02	WC130625-	820.0001		772.9	mg/L	94.3	90	110			
WG346393PBW3	PBW	06/26/13 0:10				3.1	mg/L		-20	20			
WG346393LCSW11	LCSW	06/26/13 3:26	WC130625-	820.0001		775.5	mg/L	94.6	90	110			
WG346393PBW4	PBW	06/26/13 3:35				2.6	mg/L		-20	20			
L12940-03DUP	DUP	06/26/13 5:17			U	U	mg/L				0	20	RA
L12948-01DUP	DUP	06/26/13 6:30			185	184.6	mg/L				0.2	20	
WG346393LCSW14	LCSW	06/26/13 6:43	WC130625-	820.0001		797.6	mg/L	97.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.061	mg/L	103.1	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.09	0.09			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1.0011		1.069	mg/L	106.8	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1.0011	U	1.067	mg/L	106.6	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1.0011	U	1.086	mg/L	108.5	85	115	1.76	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.993	mg/L	99.7	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.09	0.09			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.066	0.066			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1.0011		1.005	mg/L	100.4	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1.0011	U	1.004	mg/L	100.3	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1.0011	U	1.012	mg/L	101.1	70	130	0.79	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02		.021	mg/L	105	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0012	0.0012			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.01		.00999	mg/L	99.9	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.01	U	.00777	mg/L	77.7	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.01	U	.00988	mg/L	98.8	70	130	23.91	20	R4

SPF Water Engineering

ACZ Project ID: ***L12940***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.02		.02187	mg/L	109.4	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0012	0.0012			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00088	0.00088			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.01		.01049	mg/L	104.9	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.01	U	.0114	mg/L	114	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.01	U	.0107	mg/L	107	70	130	6.33	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05111	mg/L	102.2	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0006	0.0006			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04824	mg/L	96.4	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.0287	.0785	mg/L	99.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.0287	.08241	mg/L	107.3	70	130	4.86	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05191	mg/L	103.8	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0006	0.0006			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00044	0.00044			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.05194	mg/L	103.8	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	.006	.0572	mg/L	102.3	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	.006	.05	mg/L	87.9	70	130	13.43	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.0468	mg/L	102.3	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.009	0.009			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	.5		.5175	mg/L	103.5	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	.5	.006	.52	mg/L	102.8	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	.5	.006	.5306	mg/L	104.9	85	115	2.02	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.9682	mg/L	98.4	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.009	0.009			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.0066	0.0066			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	.5		.4811	mg/L	96.2	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	.5	.007	.493	mg/L	97.2	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	.5	.007	.5008	mg/L	98.8	70	130	1.57	20	

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ACZ Project ID: ***L12940***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04599	mg/L	92	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.0461	mg/L	92	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	U	.04598	mg/L	91.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	U	.04657	mg/L	93	70	130	1.27	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04744	mg/L	94.9	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.00015	0.00015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00011	0.00011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.0501		.0491	mg/L	98	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.0501	U	.04326	mg/L	86.3	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.0501	U	.04017	mg/L	80.2	70	130	7.41	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.016	mg/L	100.8	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.12	0.12			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1		1.009	mg/L	100.9	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1	U	1.024	mg/L	102.4	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1	U	1.026	mg/L	102.6	85	115	0.2	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.996	mg/L	99.8	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.12	0.12			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.088	0.088			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1		.989	mg/L	98.9	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1	U	.99	mg/L	99	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1	U	.999	mg/L	99.9	70	130	0.9	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.061	mg/L	103.1	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.03	0.03			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	.5005		.529	mg/L	105.7	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	.5005	.11	.631	mg/L	104.1	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	.5005	.11	.636	mg/L	105.1	85	115	0.79	20	

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ACZ Project ID: ***L12940***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		2.008	mg/L	100.4	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.03	0.03			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.022	0.022			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	.5005		.499	mg/L	99.7	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	.5005	.1	.618	mg/L	103.5	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	.5005	.1	.622	mg/L	104.3	70	130	0.65	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05051	mg/L	101	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.049	mg/L	97.8	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	U	.04734	mg/L	94.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	U	.04847	mg/L	96.7	70	130	2.36	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05104	mg/L	102.1	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.0501		.0495	mg/L	98.8	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.0501	U	.047	mg/L	93.8	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.0501	U	.04345	mg/L	86.7	70	130	7.85	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	100		99.64	mg/L	99.6	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.6	0.6			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	67.95918		70.4	mg/L	103.6	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	67.95918	26.6	96.12	mg/L	102.3	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	67.95918	26.6	97.55	mg/L	104.4	85	115	1.48	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	100		98.46	mg/L	98.5	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.6	0.6			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.44	0.44			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	67.95918		68.61	mg/L	101	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	67.95918	26.3	95.26	mg/L	101.5	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	67.95918	26.3	95.76	mg/L	102.2	70	130	0.52	20	

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ACZ Project ID: ***L12940***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04842	mg/L	96.8	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04804	mg/L	96	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04442	mg/L	88.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04599	mg/L	91.9	70	130	3.47	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04944	mg/L	98.9	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0015	0.0015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.0011	0.0011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04632	mg/L	92.5	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	U	.0453	mg/L	90.5	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	U	.0384	mg/L	76.7	70	130	16.49	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04615	mg/L	92.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04535	mg/L	90.6	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.00029	.04305	mg/L	85.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.00029	.04378	mg/L	86.9	70	130	1.68	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04798	mg/L	96	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.00015	0.00015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00011	0.00011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04474	mg/L	89.4	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	.0013	.046	mg/L	89.3	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	.0013	.04365	mg/L	84.6	70	130	5.24	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393LCSW1	LCSW	06/25/13 17:27	PCN41764	1408.8		1432.5	umhos/cm	101.7	90	110			
WG346393LCSW4	LCSW	06/25/13 20:53	PCN41764	1408.8		1403.8	umhos/cm	99.6	90	110			
WG346393LCSW7	LCSW	06/25/13 23:51	PCN41764	1408.8		1375.1	umhos/cm	97.6	90	110			
WG346393LCSW10	LCSW	06/26/13 3:16	PCN41764	1408.8		1350.5	umhos/cm	95.9	90	110			
L12940-03DUP	DUP	06/26/13 5:17			U	U	umhos/cm				0	20	RA
L12948-01DUP	DUP	06/26/13 6:30			1100	1100	umhos/cm				0	20	
WG346393LCSW13	LCSW	06/26/13 6:31	PCN41764	1408.8		1332.1	umhos/cm	94.6	90	110			

SPF Water Engineering

ACZ Project ID: ***L12940***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04767	mg/L	95.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04661	mg/L	93.1	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04193	mg/L	83.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04359	mg/L	87.1	70	130	3.88	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04868	mg/L	97.4	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0015	0.0015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.0011	0.0011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04529	mg/L	90.5	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	U	.0408	mg/L	81.5	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	U	.0347	mg/L	69.3	70	130	16.16	20	MA

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346907													
WG346844LRB	LRB	07/02/13 17:01				U	mg/L		-0.003	0.003			
WG346844LFB	LFB	07/02/13 17:02	WI130621-2	.2		.1955	mg/L	97.8	90	110			
L12937-02DUP	DUP	07/02/13 17:29			U	U	mg/L				0	20	RA
L12937-03LFM	LFM	07/02/13 17:31	WI130621-2	.2	U	.1966	mg/L	98.3	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346872													
WG346872ICV	ICV	07/02/13 13:37	WI130621-6	.3		.2976	mg/L	99.2	90	110			
WG346872ICB	ICB	07/02/13 13:38				U	mg/L		-0.003	0.003			
WG346908													
WG346871LRB	LRB	07/02/13 17:57				U	mg/L		-0.003	0.003			
WG346871LFB	LFB	07/02/13 17:57	WI130621-4	.2		.2004	mg/L	100.2	90	110			
L12937-01DUP	DUP	07/02/13 17:59			U	U	mg/L				0	20	RA
L12937-02LFM	LFM	07/02/13 18:01	WI130621-4	.2	U	.1915	mg/L	95.8	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.07	mg/L	103.5	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.3	0.3			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1		1.03	mg/L	103	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1	U	1.02	mg/L	102	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1	U	1.03	mg/L	103	85	115	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		2.02	mg/L	101	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.3	0.3			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.22	0.22			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1		.97	mg/L	97	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1	U	1	mg/L	100	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1	U	.99	mg/L	99	70	130	1.01	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.027	mg/L	101.4	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.06	0.06			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1		1.048	mg/L	104.8	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1	U	1.046	mg/L	104.6	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1	U	1.053	mg/L	105.3	85	115	0.67	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.967	mg/L	98.4	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.06	0.06			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.044	0.044			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1		.996	mg/L	99.6	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1	U	1.024	mg/L	102.4	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1	U	1.034	mg/L	103.4	70	130	0.97	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04868	mg/L	97.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04573	mg/L	91.4	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04513	mg/L	90.2	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04581	mg/L	91.5	70	130	1.5	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05333	mg/L	106.7	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04729	mg/L	94.5	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	U	.0492	mg/L	98.3	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	U	.04661	mg/L	93.1	70	130	5.41	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.057	mg/L	102.9	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.06	0.06			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1		1.023	mg/L	102.3	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1	U	1.037	mg/L	103.7	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1	U	1.053	mg/L	105.3	85	115	1.53	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.982	mg/L	99.1	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.06	0.06			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.044	0.044			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1		.953	mg/L	95.3	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1	U	.981	mg/L	98.1	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1	U	.991	mg/L	99.1	70	130	1.01	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	100		98.94	mg/L	98.9	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.6	0.6			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	49.99941		49.88	mg/L	99.8	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	49.99941	15	64.86	mg/L	99.7	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	49.99941	15	65.62	mg/L	101.2	85	115	1.16	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	100		98.3	mg/L	98.3	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.6	0.6			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.44	0.44			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	49.99941		49.17	mg/L	98.3	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	49.99941	14.9	64.21	mg/L	98.6	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	49.99941	14.9	64.5	mg/L	99.2	70	130	0.45	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05072	mg/L	101.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04906	mg/L	98	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04673	mg/L	93.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04795	mg/L	95.8	70	130	2.58	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04832	mg/L	96.6	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0015	0.0015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.0011	0.0011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04411	mg/L	88.1	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	.006	.0516	mg/L	91.1	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	.006	.049	mg/L	85.9	70	130	5.17	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347159													
WG347159ICV	ICV	07/09/13 13:14	HG130517-4	10		10.58	ng/L	105.8	79	121			
WG347159ICB	ICB	07/09/13 13:21				U	ng/L		-0.5	0.5			
WG347159PQV	PQV	07/09/13 13:27	HG130517-6	.5		.43	ng/L	86	70	130			
WG347159LFB	LFB	07/09/13 13:34	HG130517-5	2		2.05	ng/L	102.5	71	125			
L12940-01MS	MS	07/09/13 14:18	HG130517-5	2	U	1.06	ng/L	53	71	125			M2
L12940-01MSD	MSD	07/09/13 14:25	HG130517-5	2	U	.96	ng/L	48	71	125	9.9	24	M2
WG347159CCV1	CCV	07/09/13 15:56	HG130517-4	10		8.58	ng/L	85.8	76.5	123.4			
WG347159CCB1	CCB	07/09/13 16:03				U	ng/L		-0.5	0.5			
WG347159CCV2	CCV	07/09/13 16:50	HG130517-4	10		9.06	ng/L	90.6	76.5	123.4			
WG347159CCB2	CCB	07/09/13 16:56				U	ng/L		-0.5	0.5			
WG347159CCV3	CCV	07/09/13 17:43	HG130517-4	10		10.06	ng/L	100.6	76.5	123.4			
WG347159CCB3	CCB	07/09/13 17:50				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG345503													
WG345503ICV	ICV	06/17/13 11:57	HG130517-4	10		9.85	ng/L	98.5	79	121			
WG345503ICB	ICB	06/17/13 12:04				U	ng/L		-0.5	0.5			
WG346803													
WG346803CCV1	CCV	07/02/13 11:00	HG130517-4	10		11.8	ng/L	118	76.5	123.4			
WG346803CCB1	CCB	07/02/13 11:07				U	ng/L		-0.5	0.5			
WG346803PQV	PQV	07/02/13 11:14	HG130517-6	.5		.49	ng/L	98	70	130			
WG346803LFB	LFB	07/02/13 11:20	HG130517-5	2		2.31	ng/L	115.5	71	125			
WG346803CCV2	CCV	07/02/13 12:26	HG130517-4	10		10.97	ng/L	109.7	76.5	123.4			
WG346803CCB2	CCB	07/02/13 12:32				U	ng/L		-0.5	0.5			
WG346803CCV3	CCV	07/02/13 13:26	HG130517-4	10		11.09	ng/L	110.9	76.5	123.4			
WG346803CCB3	CCB	07/02/13 13:32				U	ng/L		-0.5	0.5			
L12940-02MS	MS	07/02/13 14:19	HG2XPREP	8	2.1	5.97	ng/L	96.8	71	125			
L12940-02MSD	MSD	07/02/13 14:26	HG2XPREP	8	2.1	5.91	ng/L	95.3	71	125	1.01	24	
WG346803CCV4	CCV	07/02/13 14:32	HG130517-4	10		10.64	ng/L	106.4	76.5	123.4			
WG346803CCB4	CCB	07/02/13 14:39				.26	ng/L		-0.5	0.5			
WG346803CCV5	CCV	07/02/13 15:40	HG130517-4	10		9.17	ng/L	91.7	76.5	123.4			
WG346803CCB5	CCB	07/02/13 15:46				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L12940***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02006		.01845	mg/L	92	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0015	0.0015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05		.04449	mg/L	89	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05	.0032	.04691	mg/L	87.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05	.0032	.04858	mg/L	90.8	70	130	3.5	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.02006		.01978	mg/L	98.6	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0015	0.0015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.0011	0.0011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05		.04532	mg/L	90.6	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05	U	.0488	mg/L	97.6	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05	U	.0453	mg/L	90.6	70	130	7.44	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05028	mg/L	100.6	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0018	0.0018			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04822	mg/L	96.3	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04278	mg/L	85.5	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04483	mg/L	89.6	70	130	4.68	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.0513	mg/L	102.6	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0018	0.0018			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00132	0.00132			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04655	mg/L	93	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	.011	.0545	mg/L	86.9	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	.011	.0464	mg/L	70.7	70	130	16.06	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347124													
WG347124ICV	ICV	07/08/13 12:58	WI121105-5	1.003		.973	mg/L	97	90	110			
WG347124ICB	ICB	07/08/13 13:01				U	mg/L		-0.15	0.15			
WG347124LFB1	LFB	07/08/13 13:02	WI121218-3	1		.98	mg/L	98	90	110			
L12913-05AS	AS	07/08/13 13:19	WI121218-3	1	.08	1.098	mg/L	101.8	90	110			
L12936-01DUP	DUP	07/08/13 13:21			.62	.61	mg/L				1.6	20	
WG347124LFB2	LFB	07/08/13 13:33	WI121218-3	1		.993	mg/L	99.3	90	110			
L12940-02AS	AS	07/08/13 13:36	WI121218-3	1	U	.987	mg/L	98.7	90	110			
L12940-03DUP	DUP	07/08/13 14:05			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L12940***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346393													
WG346393LCSW3	LCSW	06/25/13 17:51	PCN40853	6		5.99	units	99.8	98	102			
WG346393LCSW6	LCSW	06/25/13 21:08	PCN40853	6		6.01	units	100.2	98	102			
WG346393LCSW9	LCSW	06/26/13 0:05	PCN40853	6		6.01	units	100.2	98	102			
WG346393LCSW12	LCSW	06/26/13 3:30	PCN40853	6		6	units	100	98	102			
L12940-03DUP	DUP	06/26/13 5:17			6.2	5.99	units				3.4	20	
L12948-01DUP	DUP	06/26/13 6:30			8.1	8.12	units				0.2	20	
WG346393LCSW15	LCSW	06/26/13 6:47	PCN40853	6		6.01	units	100.2	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347081													
WG347081ICV	ICV	07/05/13 22:40	WI130620-3	.65228		.633	mg/L	97	90	110			
WG347081ICB	ICB	07/05/13 22:42				U	mg/L		-0.03	0.03			
WG347083													
WG347057LRB	LRB	07/05/13 23:58				U	mg/L		-0.03	0.03			
WG347057LFB	LFB	07/06/13 0:00	WI130705-2	.5		.478	mg/L	95.6	90	110			
L12937-04LFM	LFM	07/06/13 0:18	WI130705-2	.5	.03	.502	mg/L	94.4	90	110			
L12940-01DUP	DUP	07/06/13 0:20			.03	.028	mg/L				6.9	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	20		20.13	mg/L	100.7	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.9	0.9			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	99.97161		100.6	mg/L	100.6	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	99.97161	9.1	109.9	mg/L	100.8	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	99.97161	9.1	111.2	mg/L	102.1	85	115	1.18	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	20		20	mg/L	100	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.9	0.9			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.66	0.66			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	99.97161		98.38	mg/L	98.4	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	99.97161	8.9	107.5	mg/L	98.6	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	99.97161	8.9	107.9	mg/L	99	70	130	0.37	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346565													
WG346565PBW	PBW	06/27/13 12:00				U	mg/L		-15	15			
WG346565LCSW	LCSW	06/27/13 12:01	PCN42882	160		143	mg/L	89.4	80	120			
L12889-02DUP	DUP	06/27/13 12:11			U	5	mg/L				200	10	RA
L12952-08DUP	DUP	06/27/13 12:29			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L12940***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.03	mg/L	101.5	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.3	0.3			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1.0009		1.04	mg/L	103.9	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1.0009	U	1.05	mg/L	104.9	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1.0009	U	1.07	mg/L	106.9	85	115	1.89	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.95	mg/L	97.5	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.3	0.3			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.22	0.22			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1.0009		.97	mg/L	96.9	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1.0009	U	.99	mg/L	98.9	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1.0009	U	1	mg/L	99.9	70	130	1.01	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05067	mg/L	101.3	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04939	mg/L	98.7	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	.0051	.05182	mg/L	93.3	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	.0051	.05415	mg/L	98	70	130	4.4	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05213	mg/L	104.3	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.0521	mg/L	104.1	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	.0235	.07575	mg/L	104.4	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	.0235	.06635	mg/L	85.6	70	130	13.23	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.02002		.02001	mg/L	100	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.00015	0.00015			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.01001		.009544	mg/L	95.3	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.01001	U	.007238	mg/L	72.3	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.01001	U	.009031	mg/L	90.2	70	130	22.04	20	R4

SPF Water Engineering

ACZ Project ID: ***L12940***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.02002		.02017	mg/L	100.7	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.00015	0.00015			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00011	0.00011			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.01001		.009128	mg/L	91.2	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.01001	U	.00846	mg/L	84.5	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.01001	U	.00819	mg/L	81.8	70	130	3.24	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	100		100.4	mg/L	100.4	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.9	0.9			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	100.0416		100.7	mg/L	100.7	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	100.0416	42.7	141.7	mg/L	99	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	100.0416	42.7	142.6	mg/L	99.9	85	115	0.63	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	100		99.98	mg/L	100	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.9	0.9			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.66	0.66			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	100.0416		97.68	mg/L	97.6	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	100.0416	42.5	141.1	mg/L	98.6	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	100.0416	42.5	141.3	mg/L	98.8	70	130	0.14	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.07	mg/L	103.5	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.03	0.03			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	.5		.515	mg/L	103	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	.5	.16	.667	mg/L	101.4	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	.5	.16	.675	mg/L	103	85	115	1.19	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.992	mg/L	99.6	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.03	0.03			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.022	0.022			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	.5		.477	mg/L	95.4	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	.5	.15	.63	mg/L	96	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	.5	.15	.631	mg/L	96.2	70	130	0.16	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05172	mg/L	103.4	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04679	mg/L	93.5	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04676	mg/L	93.4	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04733	mg/L	94.6	70	130	1.21	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05473	mg/L	109.5	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.0494	mg/L	98.7	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	U	.0527	mg/L	105.3	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	U	.04993	mg/L	99.8	70	130	5.4	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05015		.04846	mg/L	96.6	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05005		.04316	mg/L	86.2	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05005	U	.04164	mg/L	83.2	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05005	U	.04274	mg/L	85.4	70	130	2.61	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05015		.04971	mg/L	99.1	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05005		.04282	mg/L	85.6	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05005	U	.04529	mg/L	90.5	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05005	U	.04108	mg/L	82.1	70	130	9.75	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		2.0352	mg/L	101.8	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.015	0.015			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	1		1.029	mg/L	102.9	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	1	U	1.031	mg/L	103.1	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	1	U	1.043	mg/L	104.3	85	115	1.16	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.9632	mg/L	98.2	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.015	0.015			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.011	0.011			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	1		.9576	mg/L	95.8	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	1	U	.9723	mg/L	97.2	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	1	U	.9777	mg/L	97.8	70	130	0.55	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.05306	mg/L	106.1	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0003	0.0003			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.05		.05019	mg/L	100.4	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.05	.0022	.05311	mg/L	101.8	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.05	.0022	.05417	mg/L	103.9	70	130	1.98	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.05347	mg/L	106.9	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0003	0.0003			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00022	0.00022			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.05		.04806	mg/L	96.1	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.05	.0059	.0575	mg/L	103.2	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.05	.0059	.0536	mg/L	95.4	70	130	7.02	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347071													
WG347071ICV	ICV	07/06/13 12:17	MS130416-2	.05		.04786	mg/L	95.7	90	110			
WG347071ICB	ICB	07/06/13 12:20				U	mg/L		-0.0006	0.0006			
WG347071LFB	LFB	07/06/13 12:24	MS130614-1	.0501		.04841	mg/L	96.6	85	115			
L12937-04AS	AS	07/06/13 13:21	MS130614-1	.0501	.039	.08494	mg/L	91.7	70	130			
L12937-04ASD	ASD	07/06/13 13:25	MS130614-1	.0501	.039	.08793	mg/L	97.7	70	130	3.46	20	

SPF Water Engineering

ACZ Project ID: ***L12940***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347262													
WG347262ICV	ICV	07/10/13 22:12	MS130416-2	.05		.04867	mg/L	97.3	90	110			
WG347262ICB	ICB	07/10/13 22:15				U	mg/L		-0.0006	0.0006			
WG347108LRB	LRB	07/10/13 22:19				U	mg/L		-0.00044	0.00044			
WG347108LFB	LFB	07/10/13 22:22	MS130614-1	.0501		.04695	mg/L	93.7	85	115			
L12953-05LFM	LFM	07/10/13 23:03	MS130614-1	.0501	U	.0478	mg/L	95.4	70	130			
L12953-05LFMD	LFMD	07/10/13 23:06	MS130614-1	.0501	U	.0418	mg/L	83.4	70	130	13.39	20	
WG347448													
WG347448ICV	ICV	07/11/13 22:08	MS130416-2	.05		.0484	mg/L	96.8	90	110			
WG347448ICB	ICB	07/11/13 22:11				U	mg/L		-0.0006	0.0006			
WG347108LRB	LRB	07/11/13 22:14				U	mg/L		-0.00044	0.00044			
WG347108LFB	LFB	07/11/13 22:16	MS130614-1	.0501		.04763	mg/L	95.1	85	115			
L12953-05LFM	LFM	07/11/13 22:27	MS130614-1	.0501	.0005	.04762	mg/L	94.1	70	130			
L12953-05LFMD	LFMD	07/11/13 22:30	MS130614-1	.0501	.0005	.04603	mg/L	90.9	70	130	3.4	20	
WG347209LRB	LRB	07/11/13 22:32				U	mg/L		-0.00044	0.00044			
WG347209LFB	LFB	07/11/13 22:35	MS130614-1	.0501		.04702	mg/L	93.9	85	115			

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346944													
WG346944ICV	ICV	07/03/13 16:52	II130510-1	2		1.959	mg/L	98	95	105			
WG346944ICB	ICB	07/03/13 16:58				U	mg/L		-0.03	0.03			
WG346944LFB	LFB	07/03/13 17:10	II130621-2	.5		.507	mg/L	101.4	85	115			
L12940-01AS	AS	07/03/13 17:26	II130621-2	.5	U	.507	mg/L	101.4	85	115			
L12940-01ASD	ASD	07/03/13 17:29	II130621-2	.5	U	.513	mg/L	102.6	85	115	1.18	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346958													
WG346958ICV	ICV	07/03/13 13:31	II130514-1	2		1.964	mg/L	98.2	95	105			
WG346958ICB	ICB	07/03/13 13:37				U	mg/L		-0.03	0.03			
WG346857LRB	LRB	07/03/13 13:49				U	mg/L		-0.022	0.022			
WG346857LFB	LFB	07/03/13 13:52	II130621-2	.5		.497	mg/L	99.4	85	115			
L12940-01LFM	LFM	07/03/13 13:58	II130621-2	.5	U	.497	mg/L	99.4	70	130			
L12940-01LFMD	LFMD	07/03/13 14:01	II130621-2	.5	U	.497	mg/L	99.4	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L12940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12940-01	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
	WG347262	Copper, total	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG347071	Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG347262	Vanadium, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346565	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L12940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12940-02	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
	WG347262	Copper, total	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG347071	Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG347262	Vanadium, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346565	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L12940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12940-03	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
	WG347262	Copper, total	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG347071	Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346565	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L12940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L12940-04	WG347071	Antimony, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
	WG347262	Copper, total	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG347071	Silver, dissolved	M200.8 ICP-MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		Vanadium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346393	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG346907	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346908	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347124	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347083	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346565	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346393	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
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Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L12940
Date Received: 06/25/2013 10:28
Received By: mtb
Date Printed: 6/26/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3884	14.8	11	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L12940

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [✓]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW		SPF-2013-GW but remove dissolved Hg.		HG Trip Blank analysis			
Twin Springs South	6/20/13 14:00		7	X							
Twin Springs North	6/20/13 15:00		7	X							
Spring Equip. Blank	6/20/13 15:20		7	X							
Spring Transfer Blank	6/20/13 15:40		6			X					
HG Trip Blank	6/20/13 16:00		1					X			

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/20/13 15:00	[signature]	6.25.13 10:28

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L12940 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13015

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 28, 2013. This project has been assigned to ACZ's project number, L13015. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13015. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L13015-01***
Date Sampled: *06/26/13 09:20*
Date Received: *06/28/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	46.1		*	mg/L	0.5	2.5	07/09/13 6:20	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.63		*	mg/L	0.1	0.5	07/09/13 6:20	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		5.56	H		mg/L	0.06	0.3	07/11/13 13:33	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3	5.56	H	*	mg/L	0.06	0.3	06/28/13 19:38	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/28/13 18:08	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	540		*	mg/L	10	20	07/01/13 15:22	khw
Sulfate	M300.0 - Ion Chromatography	1	57.2		*	mg/L	0.5	2.5	07/09/13 6:20	jlf

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13015-02***
Date Sampled: *06/26/13 10:55*
Date Received: *06/28/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	9.63		*	mg/L	0.5	2.5	07/09/13 6:37	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.76		*	mg/L	0.1	0.5	07/09/13 6:37	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/11/13 13:33	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/28/13 18:12	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/28/13 18:12	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	360		*	mg/L	10	20	07/01/13 15:23	khw
Sulfate	M300.0 - Ion Chromatography	1	61.4		*	mg/L	0.5	2.5	07/09/13 6:37	jlf

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: NEGRO ROCK CANYON CREEK

ACZ Sample ID: ***L13015-03***
Date Sampled: *06/26/13 12:00*
Date Received: *06/28/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	18.6		*	mg/L	0.5	2.5	07/09/13 6:55	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.69		*	mg/L	0.1	0.5	07/09/13 6:55	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.16	H		mg/L	0.02	0.1	07/11/13 13:33	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.16	H	*	mg/L	0.02	0.1	06/28/13 18:13	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/28/13 18:13	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	370		*	mg/L	10	20	07/01/13 15:25	khw
Sulfate	M300.0 - Ion Chromatography	1	77.8		*	mg/L	0.5	2.5	07/09/13 6:55	jlf

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: OWYHEE RIVER

ACZ Sample ID: ***L13015-04***
Date Sampled: *06/26/13 05:00*
Date Received: *06/28/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.60		*	mg/L	0.5	2.5	07/09/13 7:12	jlf
Fluoride	M300.0 - Ion Chromatography	1	1.18		*	mg/L	0.1	0.5	07/09/13 7:12	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	07/11/13 13:33	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	06/28/13 18:14	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/28/13 18:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	150		*	mg/L	10	20	07/02/13 12:20	mss3
Sulfate	M300.0 - Ion Chromatography	1	22.7		*	mg/L	0.5	2.5	07/09/13 7:12	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13015***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	30		31.9	mg/L	106.3	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	30		31	mg/L	103.3	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	30	U	29	mg/L	96.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	1.5		1.62	mg/L	108	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	1.5		1.55	mg/L	103.3	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	1.5	U	1.41	mg/L	94	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346710													
WG346710ICV	ICV	06/28/13 17:41	WI130411-3	2.416		2.44	mg/L	101	90	110			
WG346710ICB	ICB	06/28/13 17:42				U	mg/L		-0.06	0.06			
WG346710LFB	LFB	06/28/13 17:46	WI130215-3	2		2.017	mg/L	100.9	90	110			
L13010-02AS	AS	06/28/13 19:35	WI130215-3	6	2.77	8.106	mg/L	88.9	90	110			M2
L13010-03DUP	DUP	06/28/13 19:37			U	U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346710													
WG346710ICV	ICV	06/28/13 17:41	WI130411-3	.609		.579	mg/L	95.1	90	110			
WG346710ICB	ICB	06/28/13 17:42				U	mg/L		-0.03	0.03			
WG346710LFB	LFB	06/28/13 17:46	WI130215-3	1		1.022	mg/L	102.2	90	110			
L13010-02AS	AS	06/28/13 18:05	WI130215-3	1	U	1.005	mg/L	100.5	90	110			
L13010-03DUP	DUP	06/28/13 18:07			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13015***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346795													
L13015-03DUP	DUP	07/01/13 15:26			370	370	mg/L				0	10	
WG346795LCSW	LCSW	07/01/13 15:28	PCN42878	260		256	mg/L	98.5	80	120			
WG346795PBW	PBW	07/01/13 15:29				U	mg/L		-20	20			
WG346856													
WG346856PBW	PBW	07/02/13 11:15				U	mg/L		-20	20			
WG346856LCSW	LCSW	07/02/13 11:18	PCN42878	260		254	mg/L	97.7	80	120			
L13006-03DUP	DUP	07/02/13 12:10			160	168	mg/L				4.9	10	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	30		31.6	mg/L	105.3	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	30		30.6	mg/L	102	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	30	U	28.5	mg/L	95	90	110			

SPF Water Engineering ACZ Project ID: ***L13015***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13015-01	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346710	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346795	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L13015-02	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346710	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346795	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13015***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13015-03	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346710	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346795	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L13015***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13015-04	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346710	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346856	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13015***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L13015
Date Received: 06/28/2013 10:46
Received By: gac
Date Printed: 7/1/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the sample identification section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA17896	20.7	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13015

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SHORT HOLD WETCHEM
Lower Spring	6/26/13 9:20		1	X
Poison Spring	6/26/13 10:55		1	X
Negro Rock Canyon Creek	6/26/13 12:00		1	X
[redacted]				
Owyhee River	6/26/13 5:00		1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/27/13 9:00	[signature]	6/28/13 10:40

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13015 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 12, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q samplin
ACZ Project ID: L13026

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 29, 2013. This project has been assigned to ACZ's project number, L13026. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13026. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 11, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 2nd Q samplin
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L13026-01***
Date Sampled: *06/27/13 09:00*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	14.4		*	mg/L	0.5	2.5	07/09/13 7:30	jlf
Fluoride	M300.0 - Ion Chromatography	1	2.30		*	mg/L	0.1	0.5	07/09/13 7:30	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.17	H		mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.17	H	*	mg/L	0.02	0.1	06/29/13 13:41	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	06/29/13 13:41	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	230		*	mg/L	10	20	07/02/13 12:30	mss3
Sulfate	M300.0 - Ion Chromatography	1	38.3		*	mg/L	0.5	2.5	07/09/13 7:30	jlf

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L13026-02***
Date Sampled: *06/27/13 14:20*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.66		*	mg/L	0.5	2.5	07/09/13 7:47	jlf
Fluoride	M300.0 - Ion Chromatography	1	1.21		*	mg/L	0.1	0.5	07/09/13 7:47	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			U		mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.02	0.1	06/29/13 13:43	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/29/13 13:43	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	160		*	mg/L	10	20	07/02/13 14:27	mss3
Sulfate	M300.0 - Ion Chromatography	1	24.2		*	mg/L	0.5	2.5	07/09/13 7:47	jlf

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13026-03***
Date Sampled: *06/27/13 15:45*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	2	7.46		*	mg/L	1	5	07/09/13 8:05	jlf
Fluoride	M300.0 - Ion Chromatography	2	0.73	B	*	mg/L	0.2	1	07/09/13 8:05	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.05	B		mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.05	B	*	mg/L	0.02	0.1	06/29/13 13:45	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/29/13 13:45	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	400		*	mg/L	10	20	07/02/13 14:29	mss3
Sulfate	M300.0 - Ion Chromatography	2	137		*	mg/L	1	5	07/09/13 8:05	jlf

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY DUPLICATE

ACZ Sample ID: ***L13026-04***
Date Sampled: *06/27/13 15:55*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	2	7.23		*	mg/L	1	5	07/09/13 17:00	jlf
Fluoride	M300.0 - Ion Chromatography	2	0.71	B	*	mg/L	0.2	1	07/09/13 17:00	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.06	B		mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.06	B	*	mg/L	0.02	0.1	06/29/13 13:47	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/29/13 13:47	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390		*	mg/L	10	20	07/02/13 14:31	mss3
Sulfate	M300.0 - Ion Chromatography	2	133		*	mg/L	1	5	07/09/13 17:00	jlf

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING UPPER

ACZ Sample ID: ***L13026-05***
Date Sampled: *06/27/13 17:15*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	14.9		*	mg/L	0.5	2.5	07/09/13 17:17	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.48	B	*	mg/L	0.1	0.5	07/09/13 17:17	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			U		mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.02	0.1	06/29/13 13:48	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/29/13 13:48	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290		*	mg/L	10	20	07/02/13 14:32	mss3
Sulfate	M300.0 - Ion Chromatography	1	36.5		*	mg/L	0.5	2.5	07/09/13 17:17	jlf

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING LOWER

ACZ Sample ID: ***L13026-06***
Date Sampled: *06/27/13 18:30*
Date Received: *06/29/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	6.96		*	mg/L	0.5	2.5	07/09/13 18:10	jlf
Fluoride	M300.0 - Ion Chromatography	1	0.32	B	*	mg/L	0.1	0.5	07/09/13 18:10	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.72			mg/L	0.02	0.1	07/12/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.72		*	mg/L	0.02	0.1	06/29/13 13:51	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	06/29/13 13:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	230		*	mg/L	10	20	07/02/13 14:36	mss3
Sulfate	M300.0 - Ion Chromatography	1	23.2		*	mg/L	0.5	2.5	07/09/13 18:10	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13026***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	30		31.9	mg/L	106.3	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	30		31	mg/L	103.3	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	30	U	29	mg/L	96.7	90	110			
WG347235													
L12895-01DUP	DUP	07/09/13 15:32			.89	.92	mg/L				3.3	20	RA
L12895-02AS	AS	07/09/13 16:07	WI130501-1	30	.93	35.7	mg/L	115.9	90	110			M1
WG347235LFB	LFB	07/10/13 13:08	WI130501-1	30		31.8	mg/L	106	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	1.5		1.62	mg/L	108	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	1.5		1.55	mg/L	103.3	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	1.5	U	1.41	mg/L	94	90	110			
WG347235													
L12895-01DUP	DUP	07/09/13 15:32			U	.1	mg/L				200	20	RA
L12895-02AS	AS	07/09/13 16:07	WI130501-1	1.5	.12	1.88	mg/L	117.3	90	110			M1
WG347235LFB	LFB	07/10/13 13:08	WI130501-1	1.5		1.6	mg/L	106.7	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346726													
WG346726ICV	ICV	06/29/13 13:35	WI130411-3	2.416		2.379	mg/L	98.5	90	110			
WG346726ICB	ICB	06/29/13 13:36				U	mg/L		-0.06	0.06			
WG346726LFB	LFB	06/29/13 13:40	WI130215-3	2		1.969	mg/L	98.5	90	110			
L13026-01AS	AS	06/29/13 13:42	WI130215-3	2	.17	2.145	mg/L	98.8	90	110			
L13026-02DUP	DUP	06/29/13 13:44			U	U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346726													
WG346726ICV	ICV	06/29/13 13:35	WI130411-3	.609		.57	mg/L	93.6	90	110			
WG346726ICB	ICB	06/29/13 13:36				U	mg/L		-0.03	0.03			
WG346726LFB	LFB	06/29/13 13:40	WI130215-3	1		1.009	mg/L	100.9	90	110			
L13026-01AS	AS	06/29/13 13:42	WI130215-3	1	U	1.01	mg/L	101	90	110			
L13026-02DUP	DUP	06/29/13 13:44			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13026***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346856													
WG346856PBW	PBW	07/02/13 11:15				U	mg/L		-20	20			
WG346856LCSW	LCSW	07/02/13 11:18	PCN42878	260		254	mg/L	97.7	80	120			
L13006-03DUP	DUP	07/02/13 12:10			160	168	mg/L				4.9	10	
WG346878													
WG346878LCSW	LCSW	07/02/13 14:20	PCN42878	260		264	mg/L	101.5	80	120			
WG346878PBW	PBW	07/02/13 14:21				U	mg/L		-20	20			
L13026-05DUP	DUP	07/02/13 14:34			290	286	mg/L				1.4	10	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG347169													
WG347169LFB1	LFB	07/08/13 19:32	WI130501-1	30		31.6	mg/L	105.3	90	110			
WG347169LFB2	LFB	07/09/13 4:00	WI130501-1	30		30.6	mg/L	102	90	110			
L12957-01DUP	DUP	07/09/13 4:35			U	U	mg/L				0	20	RA
L12957-02AS	AS	07/09/13 5:45	WI130501-1	30	U	28.5	mg/L	95	90	110			
WG347235													
WG347235LFB	LFB	07/09/13 14:57	WI130501-1	30		32.9	mg/L	109.7	90	110			
L12895-01DUP	DUP	07/09/13 15:32			11.7	12	mg/L				2.5	20	
L12895-02AS	AS	07/09/13 16:07	WI130501-1	30	12.4	46.7	mg/L	114.3	90	110			M1
WG347235LFB	LFB	07/10/13 13:08	WI130501-1	30		31.5	mg/L	105	90	110			

SPF Water Engineering ACZ Project ID: ***L13026***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13026-01	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346856	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L13026-02	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346878	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L13026***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13026-03	WG347169	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346878	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347169	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L13026-04	WG347235	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346878	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347235	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering

ACZ Project ID: ***L13026***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13026-05	WG347235	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346878	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347235	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13026-06	WG347235	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346726	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346878	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG347235	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13026***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L13026
Date Received: 06/29/2013 09:48
Received By: gac
Date Printed: 7/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA17899	17.8	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13026

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SHORT-HOLDS -WETCHEM							
Leslie Gulch	6/27/13 9:00		1	X							
Dry Creek Arm	6/27/13 14:20		1	X							
Whiskey Spring	6/27/13 15:45		1	X							
Whiskey Duplicate	6/27/13 15:55		1	X							
Sourdough Spring Upper	6/27/13 17:15		1	X							
Sourdough Spring Lower	6/27/13 18:30		1	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/28/13 9:00		
		6-29-13	9:40

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13026 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13032

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 01, 2013. This project has been assigned to ACZ's project number, L13032. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13032. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 18, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering

July 19, 2013

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13032

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on July 1, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13032. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report:

1. For L13032-01, 02 and -04, the dissolved and total cobalt values were verified by re-digestion and re-analysis with no significant change.

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L13032-01***
Date Sampled: *06/26/13 09:20*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/10/13 11:36	mla
Cyanide, WAD	SM4500-CN I- distillation								07/09/13 12:48	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 14:40	mla
Total Hot Plate Digestion	M200.2 ICP								07/09/13 9:03	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/16/13 11:24	scp

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L13032-01***
Date Sampled: *06/26/13 09:20*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/08/13 23:57	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 23:23	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 3:10	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 5:21	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	07/12/13 3:10	msh
Arsenic, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0002	0.001	07/12/13 5:21	pmc
Barium, dissolved	M200.7 ICP	1	0.055			mg/L	0.003	0.02	07/08/13 23:57	jjc
Barium, total	M200.7 ICP	1	0.058			mg/L	0.003	0.02	07/09/13 23:23	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:10	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:21	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/08/13 23:57	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:23	aeb
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/08/13 23:57	jjc
Boron, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/11/13 14:04	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:10	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:21	pmc
Calcium, dissolved	M200.7 ICP	1	55.2			mg/L	0.2	1	07/08/13 23:57	jjc
Calcium, total	M200.7 ICP	1	55.7			mg/L	0.2	1	07/09/13 23:23	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 3:10	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 5:21	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00120			mg/L	0.00005	0.0003	07/18/13 0:24	msh
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	07/18/13 3:34	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	07/12/13 3:10	msh
Copper, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	07/12/13 5:21	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/08/13 23:57	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:23	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/08/13 23:57	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 23:23	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:10	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:21	pmc
Lithium, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.02	0.1	07/08/13 23:57	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/09/13 23:23	aeb
Magnesium, dissolved	M200.7 ICP	1	25.2			mg/L	0.2	1	07/08/13 23:57	jjc
Magnesium, total	M200.7 ICP	1	25.8			mg/L	0.2	1	07/09/13 23:23	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.003	07/12/13 3:10	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 5:21	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.1		*	ng/L	0.2	0.5	07/09/13 16:10	las
Mercury, total	M1631, Atomic Fluorescence	2	1.5			ng/L	0.4	1	07/11/13 13:23	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 3:10	msh
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 5:21	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 3:10	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 5:21	pmc
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	07/08/13 23:57	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LOWE SPRING

ACZ Sample ID: ***L13032-01***
Date Sampled: *06/26/13 09:20*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	07/09/13 23:23	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/08/13 23:57	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:23	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	07/12/13 3:10	msh
Selenium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	07/12/13 5:21	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:10	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:21	pmc
Sodium, dissolved	M200.7 ICP	1	113			mg/L	0.3	2	07/08/13 23:57	jjc
Sodium, total	M200.7 ICP	1	114			mg/L	0.3	2	07/09/13 23:23	aeb
Strontium, dissolved	M200.7 ICP	1	0.22			mg/L	0.01	0.05	07/08/13 23:57	jjc
Strontium, total	M200.7 ICP	1	0.22			mg/L	0.01	0.05	07/09/13 23:23	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:10	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:21	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 3:10	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 5:21	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/08/13 23:57	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 23:23	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0087			mg/L	0.0001	0.0005	07/12/13 3:10	msh
Uranium, total	M200.8 ICP-MS	1	0.0088			mg/L	0.0001	0.0005	07/12/13 5:21	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0080			mg/L	0.0002	0.001	07/13/13 22:37	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0081			mg/L	0.0002	0.001	07/12/13 5:21	pmc
Zinc, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	07/08/13 23:57	jjc
Zinc, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	07/09/13 23:23	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	335		*	mg/L	2	20	07/02/13 0:00	abm
Carbonate as CaCO3		1	13	B	*	mg/L	2	20	07/02/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/13 0:00	abm
Total Alkalinity		1	348		*	mg/L	2	20	07/02/13 0:00	abm
Conductivity @25C	SM2510B	1	885		*	umhos/cm	1	10	07/02/13 2:56	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/10/13 23:01	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/13 14:38	bsu
Hardness as CaCO3	SM2340B - Calculation		242			mg/L	1	7	07/19/13 13:43	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 18:17	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	07/02/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/02/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/13 17:20	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/02/13 11:29	khw

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13032-02***
Date Sampled: *06/26/13 10:55*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/10/13 11:42	mla
Cyanide, WAD	SM4500-CN I- distillation								07/09/13 13:04	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 14:46	mla
Total Hot Plate Digestion	M200.2 ICP								07/09/13 9:14	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/16/13 11:36	scp

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13032-02***
Date Sampled: *06/26/13 10:55*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.03	0.2	07/09/13 0:06	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 23:26	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 3:14	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 5:24	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0364			mg/L	0.0002	0.001	07/12/13 3:14	msh
Arsenic, total	M200.8 ICP-MS	1	0.0333			mg/L	0.0002	0.001	07/12/13 5:24	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/09/13 0:06	jjc
Barium, total	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	07/09/13 23:26	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:14	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:24	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:06	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:26	aeb
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/09/13 0:06	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/11/13 14:07	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:14	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:24	pmc
Calcium, dissolved	M200.7 ICP	1	1.1			mg/L	0.2	1	07/09/13 0:06	jjc
Calcium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	07/09/13 23:26	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 3:14	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 5:24	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00173			mg/L	0.00005	0.0003	07/18/13 0:27	msh
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	07/18/13 3:37	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 3:14	msh
Copper, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/12/13 5:24	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:06	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:26	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:06	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 23:26	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:14	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:24	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 0:06	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 23:26	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	07/09/13 0:06	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/09/13 23:26	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	07/12/13 3:14	msh
Manganese, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	07/12/13 5:24	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5		*	ng/L	0.2	0.5	07/09/13 16:16	las
Mercury, total	M1631, Atomic Fluorescence	2	0.5	B	*	ng/L	0.4	1	07/11/13 13:43	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0156			mg/L	0.0005	0.003	07/12/13 3:14	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0156			mg/L	0.0005	0.003	07/12/13 5:24	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 3:14	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 5:24	pmc
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.3	2	07/09/13 0:06	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13032-02***
Date Sampled: *06/26/13 10:55*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.3	2	07/09/13 23:26	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:06	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:26	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/12/13 3:14	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/12/13 5:24	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:14	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:24	pmc
Sodium, dissolved	M200.7 ICP	1	110			mg/L	0.3	2	07/09/13 0:06	jjc
Sodium, total	M200.7 ICP	1	110			mg/L	0.3	2	07/09/13 23:26	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:06	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:26	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:14	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:24	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 3:14	msh
Tin, total	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0005	07/12/13 5:24	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:06	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 23:26	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:14	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:24	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/12/13 3:14	msh
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	07/12/13 5:24	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:06	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:26	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	123		*	mg/L	2	20	07/02/13 0:00	abm
Carbonate as CaCO3		1	41		*	mg/L	2	20	07/02/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/13 0:00	abm
Total Alkalinity		1	164		*	mg/L	2	20	07/02/13 0:00	abm
Conductivity @25C	SM2510B	1	495		*	umhos/cm	1	10	07/02/13 3:37	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/10/13 23:02	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/13 14:52	bsu
Hardness as CaCO3	SM2340B - Calculation		3	B		mg/L	1	7	07/19/13 13:43	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 18:18	mpb
pH (lab)	SM4500H+ B									
pH		1	9.0	H	*	units	0.1	0.1	07/02/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/02/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/09/13 17:21	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 9:07	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: NEGRO ROCK CANYON CREEK

ACZ Sample ID: ***L13032-03***
Date Sampled: *06/26/13 12:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/10/13 11:48	mla
Cyanide, WAD	SM4500-CN I- distillation								07/09/13 13:12	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 14:53	mla
Total Hot Plate Digestion	M200.2 ICP-MS								07/09/13 14:56	las
Total Hot Plate Digestion	M200.2 ICP								07/09/13 9:49	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: NEGRO ROCK CANYON CREEK

ACZ Sample ID: ***L13032-03***
Date Sampled: *06/26/13 12:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:09	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 23:35	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 3:17	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 5:27	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0246			mg/L	0.0002	0.001	07/12/13 3:17	msh
Arsenic, total	M200.8 ICP-MS	1	0.0243			mg/L	0.0002	0.001	07/12/13 5:27	pmc
Barium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.003	0.02	07/09/13 0:09	jjc
Barium, total	M200.7 ICP	1	0.016	B		mg/L	0.003	0.02	07/09/13 23:35	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:17	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:27	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:09	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:35	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/09/13 0:09	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/11/13 14:16	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:17	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:27	pmc
Calcium, dissolved	M200.7 ICP	1	31.2			mg/L	0.2	1	07/09/13 0:09	jjc
Calcium, total	M200.7 ICP	1	30.9			mg/L	0.2	1	07/09/13 23:35	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 3:17	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 5:27	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00028	B		mg/L	0.00005	0.0003	07/12/13 3:17	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	07/12/13 5:27	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 3:17	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 5:27	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:09	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:35	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:09	jjc
Iron, total	M200.7 ICP	1	0.03	B		mg/L	0.02	0.05	07/09/13 23:35	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:17	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:27	pmc
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/09/13 0:09	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	07/09/13 23:35	aeb
Magnesium, dissolved	M200.7 ICP	1	10.1			mg/L	0.2	1	07/09/13 0:09	jjc
Magnesium, total	M200.7 ICP	1	10.0			mg/L	0.2	1	07/09/13 23:35	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0109			mg/L	0.0005	0.003	07/12/13 3:17	msh
Manganese, total	M200.8 ICP-MS	1	0.0125			mg/L	0.0005	0.003	07/12/13 5:27	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6		*	ng/L	0.2	0.5	07/09/13 16:23	las
Mercury, total	M1631, Atomic Fluorescence	2	0.7	B	*	ng/L	0.4	1	07/11/13 13:50	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0094			mg/L	0.0005	0.003	07/12/13 3:17	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0095			mg/L	0.0005	0.003	07/12/13 5:27	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 3:17	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 5:27	pmc
Potassium, dissolved	M200.7 ICP	1	8.0			mg/L	0.3	2	07/09/13 0:09	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: NEGRO ROCK CANYON CREEK

ACZ Sample ID: ***L13032-03***
Date Sampled: *06/26/13 12:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.8			mg/L	0.3	2	07/09/13 23:35	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:09	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:35	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0003	07/12/13 3:17	msh
Selenium, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0003	07/12/13 5:27	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:17	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:27	pmc
Sodium, dissolved	M200.7 ICP	1	62.8			mg/L	0.3	2	07/09/13 0:09	jjc
Sodium, total	M200.7 ICP	1	61.5			mg/L	0.3	2	07/09/13 23:35	aeb
Strontium, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/09/13 0:09	jjc
Strontium, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/09/13 23:35	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:17	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:27	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 3:17	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 5:27	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:09	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 23:35	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	07/12/13 3:17	msh
Uranium, total	M200.8 ICP-MS	1	0.0023			mg/L	0.0001	0.0005	07/12/13 5:27	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0198		*	mg/L	0.0002	0.001	07/12/13 3:17	msh
Vanadium, total	M200.8 ICP-MS	1	0.0205			mg/L	0.0002	0.001	07/12/13 5:27	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:09	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:35	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	156		*	mg/L	2	20	07/02/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/02/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/13 0:00	abm
Total Alkalinity		1	156		*	mg/L	2	20	07/02/13 0:00	abm
Conductivity @25C	SM2510B	1	515		*	umhos/cm	1	10	07/02/13 3:46	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/10/13 23:03	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/13 14:28	bsu
Hardness as CaCO3	SM2340B - Calculation		120			mg/L	1	7	07/19/13 13:43	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 18:19	mpb
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	07/02/13 0:00	abm
pH measured at		1	23.0		*	C	0.1	0.1	07/02/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.06		*	mg/L	0.01	0.05	07/09/13 17:22	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 9:10	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: OWYHEE RIVER

ACZ Sample ID: ***L13032-04***
Date Sampled: *06/26/13 05:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/10/13 11:54	mla
Cyanide, WAD	SM4500-CN I- distillation								07/09/13 13:20	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 14:59	mla
Total Hot Plate Digestion	M200.2 ICP								07/09/13 10:01	aeb
Total Hot Plate Digestion	M200.2 ICP-MS				*				07/16/13 11:48	scp

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: OWYHEE RIVER

ACZ Sample ID: ***L13032-04***
Date Sampled: *06/26/13 05:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:12	jjc
Aluminum, total	M200.7 ICP	1	0.22			mg/L	0.03	0.2	07/09/13 23:38	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 3:21	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 5:37	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0059			mg/L	0.0002	0.001	07/12/13 3:21	msh
Arsenic, total	M200.8 ICP-MS	1	0.0054			mg/L	0.0002	0.001	07/12/13 5:37	pmc
Barium, dissolved	M200.7 ICP	1	0.015	B		mg/L	0.003	0.02	07/09/13 0:12	jjc
Barium, total	M200.7 ICP	1	0.020			mg/L	0.003	0.02	07/09/13 23:38	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:21	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:37	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:12	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:38	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	07/09/13 0:12	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/11/13 14:19	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:21	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:37	pmc
Calcium, dissolved	M200.7 ICP	1	20.6			mg/L	0.2	1	07/09/13 0:12	jjc
Calcium, total	M200.7 ICP	1	20.4			mg/L	0.2	1	07/09/13 23:38	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 3:21	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 5:37	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00049			mg/L	0.00005	0.0003	07/18/13 0:31	msh
Cobalt, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	07/18/13 3:40	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/12/13 3:21	msh
Copper, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.003	07/12/13 5:37	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:12	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:38	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:12	jjc
Iron, total	M200.7 ICP	1	0.16			mg/L	0.02	0.05	07/09/13 23:38	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:21	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:37	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 0:12	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 23:38	aeb
Magnesium, dissolved	M200.7 ICP	1	5.5			mg/L	0.2	1	07/09/13 0:12	jjc
Magnesium, total	M200.7 ICP	1	5.4			mg/L	0.2	1	07/09/13 23:38	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.003	07/12/13 3:21	msh
Manganese, total	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	07/12/13 5:37	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	2	1.3		*	ng/L	0.4	1	07/09/13 16:30	las
Mercury, total	M1631, Atomic Fluorescence	2	1.6			ng/L	0.4	1	07/11/13 13:56	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	07/12/13 3:21	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	07/12/13 5:37	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	07/12/13 3:21	msh
Nickel, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0006	0.003	07/12/13 5:37	pmc
Potassium, dissolved	M200.7 ICP	1	3.4			mg/L	0.3	2	07/09/13 0:12	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: OWYHEE RIVER

ACZ Sample ID: ***L13032-04***
Date Sampled: *06/26/13 05:00*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	3.3			mg/L	0.3	2	07/09/13 23:38	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:12	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:38	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0003	07/12/13 3:21	msh
Selenium, total	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	07/12/13 5:37	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:21	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 5:37	pmc
Sodium, dissolved	M200.7 ICP	1	27.0			mg/L	0.3	2	07/09/13 0:12	jjc
Sodium, total	M200.7 ICP	1	26.3			mg/L	0.3	2	07/09/13 23:38	aeb
Strontium, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/09/13 0:12	jjc
Strontium, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/09/13 23:38	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:21	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 5:37	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 3:21	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 5:37	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:12	jjc
Titanium, total	M200.7 ICP	1	0.007	B		mg/L	0.005	0.03	07/09/13 23:38	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0005	07/12/13 3:21	msh
Uranium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0005	07/12/13 5:37	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0002	0.001	07/12/13 23:31	msh
Vanadium, total	M200.8 ICP-MS	1	0.0050			mg/L	0.0002	0.001	07/12/13 5:37	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:12	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:38	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	90		*	mg/L	2	20	07/02/13 0:00	abm
Carbonate as CaCO3		1	5	B	*	mg/L	2	20	07/02/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/13 0:00	abm
Total Alkalinity		1	95		*	mg/L	2	20	07/02/13 0:00	abm
Conductivity @25C	SM2510B	1	264		*	umhos/cm	1	10	07/02/13 3:55	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/10/13 23:04	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/13 14:31	bsu
Hardness as CaCO3	SM2340B - Calculation		74			mg/L	1	7	07/19/13 13:44	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/08/13 18:20	mpb
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	07/02/13 0:00	abm
pH measured at		1	23.0		*	C	0.1	0.1	07/02/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/13 17:23	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 9:11	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: HG TRIP BLANK

ACZ Sample ID: ***L13032-05***
Date Sampled: *06/26/13 17:30*
Date Received: *07/01/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/11/13 13:03	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13032***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346808													
WG346808PBW1	PBW	07/01/13 16:53				3.7	mg/L		-20	20			
WG346808LCSW2	LCSW	07/01/13 17:07	WC130625-	820.0001		775.1	mg/L	94.5	90	110			
WG346808LCSW5	LCSW	07/01/13 20:04	WC130625-	820.0001		769.7	mg/L	93.9	90	110			
WG346808PBW2	PBW	07/01/13 20:13				3	mg/L		-20	20			
WG346808LCSW8	LCSW	07/01/13 23:09	WC130625-	820.0001		791.4	mg/L	96.5	90	110			
WG346808PBW3	PBW	07/01/13 23:17				2.9	mg/L		-20	20			
L13032-01DUP	DUP	07/02/13 3:05			348	329.3	mg/L				5.5	20	
WG346808LCSW11	LCSW	07/02/13 3:19	WC130625-	820.0001		778	mg/L	94.9	90	110			
WG346808PBW4	PBW	07/02/13 3:28				3.9	mg/L		-20	20			
L13032-04DUP	DUP	07/02/13 4:04			95	96.4	mg/L				1.5	20	
WG346808LCSW14	LCSW	07/02/13 4:17	WC130625-	820.0001		795	mg/L	97	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.037	mg/L	101.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.09	0.09			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0011		1.044	mg/L	104.3	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1.0011	U	1.043	mg/L	104.2	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1.0011	U	1.044	mg/L	104.3	85	115	0.1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.986	mg/L	99.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.09	0.09			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.066	0.066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0011		1.007	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0011	U	.995	mg/L	99.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0011	U	.983	mg/L	98.2	70	130	1.21	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02		.02184	mg/L	109.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0012	0.0012			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.01		.0099	mg/L	99	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.01	U	.00832	mg/L	83.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.01	U	.00893	mg/L	89.3	70	130	7.07	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.01	U	.00872	mg/L	87.2	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.01	U	.00886	mg/L	88.6	70	130	1.59	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.02		.02045	mg/L	102.3	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0012	0.0012			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00088	0.00088			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.01		.01046	mg/L	104.6	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.01	U	.01058	mg/L	105.8	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.01	U	.01061	mg/L	106.1	70	130	0.28	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05457	mg/L	109.1	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0006	0.0006			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05269	mg/L	105.3	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	.0016	.05527	mg/L	107.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	.0016	.05761	mg/L	111.9	70	130	4.15	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0059	.06096	mg/L	110	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0059	.06136	mg/L	110.8	70	130	0.65	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05103	mg/L	102.1	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0006	0.0006			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00044	0.00044			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.0494	mg/L	98.7	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0054	.05517	mg/L	99.4	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0054	.05444	mg/L	98	70	130	1.33	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0295	mg/L	101.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.009	0.009			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.5063	mg/L	101.3	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	.5	.192	.6907	mg/L	99.7	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	.5	.192	.6941	mg/L	100.4	85	115	0.49	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9378	mg/L	96.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.009	0.009			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.0066	0.0066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.4766	mg/L	95.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	.005	.467	mg/L	92.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	.005	.4601	mg/L	91	70	130	1.49	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04782	mg/L	95.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.04741	mg/L	94.6	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.0501	U	.0478	mg/L	95.4	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.0501	U	.04973	mg/L	99.3	70	130	3.96	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	U	.04977	mg/L	99.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	U	.04944	mg/L	98.7	70	130	0.67	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.04682	mg/L	93.6	90	110			
WG347452ICB	ICB	07/12/13 4:58				.000077	mg/L		-0.00015	0.00015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00011	0.00011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.0501		.04615	mg/L	92.1	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.0501	U	.04824	mg/L	96.3	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.0501	U	.04834	mg/L	96.5	70	130	0.21	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.995	mg/L	99.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.12	0.12			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.007	mg/L	100.7	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1	U	.999	mg/L	99.9	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1	U	1.015	mg/L	101.5	85	115	1.59	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.971	mg/L	98.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.12	0.12			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.088	0.088			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.016	mg/L	101.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.011	mg/L	101.1	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.977	mg/L	97.7	70	130	3.42	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.047	mg/L	102.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5005		.514	mg/L	102.7	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	.5005	.38	.891	mg/L	102.1	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	.5005	.38	.89	mg/L	101.9	85	115	0.11	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		2.016	mg/L	100.8	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5005		.482	mg/L	96.3	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5005	.12	.604	mg/L	96.7	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5005	.12	.607	mg/L	97.3	70	130	0.5	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.0506	mg/L	101.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.04923	mg/L	98.3	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.0501	U	.04835	mg/L	96.5	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.0501	U	.05047	mg/L	100.7	70	130	4.29	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	U	.04976	mg/L	99.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	U	.04917	mg/L	98.1	70	130	1.19	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05028	mg/L	100.6	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.0501		.04848	mg/L	96.8	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.0501	U	.04856	mg/L	96.9	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.0501	U	.04867	mg/L	97.1	70	130	0.23	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		99.86	mg/L	99.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	68.0028		71.18	mg/L	104.7	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	68.0028	2.4	73.16	mg/L	104.1	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	68.0028	2.4	72.96	mg/L	103.8	85	115	0.27	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.28	mg/L	98.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	68.0028		68.43	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	68.0028	1.1	69.08	mg/L	100	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	68.0028	1.1	67.97	mg/L	98.3	70	130	1.62	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05152	mg/L	103	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05088	mg/L	101.7	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.04713	mg/L	94.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.04896	mg/L	97.8	70	130	3.81	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04827	mg/L	96.4	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04885	mg/L	97.6	70	130	1.19	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.04865	mg/L	97.3	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0015	0.0015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.0011	0.0011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04781	mg/L	95.5	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	U	.04754	mg/L	95	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	U	.04734	mg/L	94.6	70	130	0.42	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04724	mg/L	94.5	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04697	mg/L	93.8	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	.00015	.04434	mg/L	88.3	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	.00015	.04578	mg/L	91.2	70	130	3.2	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.00046	.04597	mg/L	90.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.00046	.04537	mg/L	89.7	70	130	1.31	20	
WG347770													
WG347770ICV	ICV	07/18/13 0:11	MS130717-9	.05		.04703	mg/L	94.1	90	110			
WG347770ICB	ICB	07/18/13 0:14				U	mg/L		-0.00015	0.00015			
WG347770LFB	LFB	07/18/13 0:17	MS130717-1	.05005		.04866	mg/L	97.2	85	115			
L13141-02AS	AS	07/18/13 0:45	MS130717-1	.1001	.003	.11272	mg/L	109.6	70	130			
L13141-02ASD	ASD	07/18/13 0:55	MS130717-1	.1001	.003	.10496	mg/L	101.9	70	130	7.13	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.04923	mg/L	98.5	90	110			
WG347452ICB	ICB	07/12/13 4:58				.000063	mg/L		-0.00015	0.00015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00011	0.00011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.05001	mg/L	99.9	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0001	.04869	mg/L	97.1	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0001	.04891	mg/L	97.5	70	130	0.45	20	
WG347782													
WG347782ICV	ICV	07/18/13 3:21	MS130717-9	.05		.05008	mg/L	100.2	90	110			
WG347782ICB	ICB	07/18/13 3:24				U	mg/L		-0.00015	0.00015			
WG347677LRB	LRB	07/18/13 3:27				U	mg/L		-0.00011	0.00011			
WG347677LFB	LFB	07/18/13 3:30	MS130614-1	.05005		.05029	mg/L	100.5	85	115			
L13179-02LFM	LFM	07/18/13 3:53	MS130614-1	.05005	.00263	.05186	mg/L	98.4	70	130			
L13179-02LFMD	LFMD	07/18/13 4:02	MS130614-1	.05005	.00263	.05147	mg/L	97.6	70	130	0.75	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346808													
WG346808LCSW1	LCSW	07/01/13 16:55	PCN42820	1408.8		1434.5	umhos/cm	101.8	90	110			
WG346808LCSW4	LCSW	07/01/13 19:53	PCN42820	1408.8		1402.8	umhos/cm	99.6	90	110			
WG346808LCSW7	LCSW	07/01/13 22:57	PCN42820	1408.8		1382.3	umhos/cm	98.1	90	110			
L13032-01DUP	DUP	07/02/13 3:05			885	886	umhos/cm				0.1	20	
WG346808LCSW10	LCSW	07/02/13 3:07	PCN42820	1408.8		1364.9	umhos/cm	96.9	90	110			
L13032-04DUP	DUP	07/02/13 4:04			264	263	umhos/cm				0.4	20	
WG346808LCSW13	LCSW	07/02/13 4:06	PCN42820	1408.8		1347.6	umhos/cm	95.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05134	mg/L	102.7	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04955	mg/L	99	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.04616	mg/L	92.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.04798	mg/L	95.9	70	130	3.87	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0007	.0471	mg/L	92.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0007	.04755	mg/L	93.6	70	130	0.95	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.04936	mg/L	98.7	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0015	0.0015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.0011	0.0011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04796	mg/L	95.8	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0011	.04724	mg/L	92.2	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0011	.04753	mg/L	92.8	70	130	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347370													
WG347370ICV	ICV	07/10/13 22:36	WI130708-6	.3		.287	mg/L	95.7	90	110			
WG347370ICB	ICB	07/10/13 22:37				U	mg/L		-0.003	0.003			
WG347291LRB	LRB	07/10/13 22:39				U	mg/L		-0.003	0.003			
WG347291LFB	LFB	07/10/13 22:40	WI130708-2	.2		.2073	mg/L	103.7	90	110			
L13004-05DUP	DUP	07/10/13 22:54			U	U	mg/L				0	20	RA
L13004-06LFM	LFM	07/10/13 22:56	WI130708-2	.2	U	.1915	mg/L	95.8	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347220													
WG347220ICV	ICV	07/09/13 11:40	WI130708-6	.3		.2844	mg/L	94.8	90	110			
WG347220ICB	ICB	07/09/13 11:41				U	mg/L		-0.003	0.003			
WG347242													
WG347195LRB	LRB	07/09/13 14:09				U	mg/L		-0.003	0.003			
WG347195LFB	LFB	07/09/13 14:10	WI130708-4	.2		.1967	mg/L	98.4	90	110			
L13029-04DUP	DUP	07/09/13 14:24			U	U	mg/L				0	20	RA
L13032-01LFM	LFM	07/09/13 14:38	WI130708-4	.2	U	.1858	mg/L	92.9	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.07	mg/L	103.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.04	mg/L	104	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1	U	1.03	mg/L	103	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1	U	1.06	mg/L	106	85	115	2.87	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.99	mg/L	99.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.03	mg/L	103	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.03	mg/L	103	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	1.01	mg/L	101	70	130	1.96	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.003	mg/L	100.2	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0014		1.021	mg/L	102	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1.0014	U	1.023	mg/L	102.2	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1.0014	U	1.02	mg/L	101.9	85	115	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.963	mg/L	98.2	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0014		.979	mg/L	97.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0014	U	.957	mg/L	95.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0014	U	.948	mg/L	94.7	70	130	0.94	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05172	mg/L	103.4	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04923	mg/L	98.4	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.04767	mg/L	95.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.04933	mg/L	98.6	70	130	3.42	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04888	mg/L	97.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04821	mg/L	96.3	70	130	1.38	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05091	mg/L	101.8	90	110			
WG347452ICB	ICB	07/12/13 4:58				.00014	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04748	mg/L	94.9	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	U	.04783	mg/L	95.6	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	U	.04804	mg/L	96	70	130	0.44	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.04	mg/L	102	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.021	mg/L	102.1	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1	.1	1.101	mg/L	100.1	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1	.1	1.107	mg/L	100.7	85	115	0.54	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.952	mg/L	97.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.995	mg/L	99.5	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.977	mg/L	97.7	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.966	mg/L	96.6	70	130	1.13	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		98.9	mg/L	98.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	49.99752		50.08	mg/L	100.2	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	49.99752	2.1	51.55	mg/L	98.9	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	49.99752	2.1	51.42	mg/L	98.6	85	115	0.25	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		97.76	mg/L	97.8	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	49.99752		48.97	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	49.99752	U	48.32	mg/L	96.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	49.99752	U	47.34	mg/L	94.7	70	130	2.05	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04731	mg/L	94.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04638	mg/L	92.7	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	.0037	.04785	mg/L	88.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	.0037	.0495	mg/L	91.5	70	130	3.39	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.001	.04651	mg/L	90.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.001	.04585	mg/L	89.6	70	130	1.43	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05007	mg/L	100.1	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0015	0.0015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.0011	0.0011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04955	mg/L	99	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0029	.05151	mg/L	97.1	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0029	.05183	mg/L	97.8	70	130	0.62	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347159													
WG347159ICV	ICV	07/09/13 13:14	HG130517-4	10		10.58	ng/L	105.8	79	121			
WG347159ICB	ICB	07/09/13 13:21				U	ng/L		-0.5	0.5			
WG347159PQV	PQV	07/09/13 13:27	HG130517-6	.5		.43	ng/L	86	70	130			
WG347159LFB	LFB	07/09/13 13:34	HG130517-5	2		2.05	ng/L	102.5	71	125			
L12940-01MS	MS	07/09/13 14:18	HG130517-5	2	U	1.06	ng/L	53	71	125			M2
L12940-01MSD	MSD	07/09/13 14:25	HG130517-5	2	U	.96	ng/L	48	71	125	9.9	24	M2
WG347159CCV1	CCV	07/09/13 15:56	HG130517-4	10		8.58	ng/L	85.8	76.5	123.4			
WG347159CCB1	CCB	07/09/13 16:03				U	ng/L		-0.5	0.5			
WG347159CCV2	CCV	07/09/13 16:50	HG130517-4	10		9.06	ng/L	90.6	76.5	123.4			
WG347159CCB2	CCB	07/09/13 16:56				U	ng/L		-0.5	0.5			
WG347159CCV3	CCV	07/09/13 17:43	HG130517-4	10		10.06	ng/L	100.6	76.5	123.4			
WG347159CCB3	CCB	07/09/13 17:50				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347365													
WG347365ICV	ICV	07/11/13 12:36	HG130517-4	10		10.44	ng/L	104.4	79	121			
WG347365ICB	ICB	07/11/13 12:42				U	ng/L		-0.5	0.5			
WG347365PQV	PQV	07/11/13 12:49	HG130517-6	.5		.54	ng/L	108	70	130			
WG347365LFB	LFB	07/11/13 12:55	HG130517-5	2		1.96	ng/L	98	71	125			
L13032-01MS	MS	07/11/13 13:30	HG2XPREP	8	1.5	5.05	ng/L	88.8	71	125			
L13032-01MSD	MSD	07/11/13 13:36	HG2XPREP	8	1.5	4.82	ng/L	83	71	125	4.66	24	
WG347365CCV1	CCV	07/11/13 14:03	HG130517-4	10		9.01	ng/L	90.1	76.5	123.4			
WG347365CCB1	CCB	07/11/13 14:10				U	ng/L		-0.5	0.5			
WG347365CCV2	CCV	07/11/13 14:56	HG130517-4	10		9.25	ng/L	92.5	76.5	123.4			
WG347365CCB2	CCB	07/11/13 15:03				U	ng/L		-0.5	0.5			
WG347365CCV3	CCV	07/11/13 15:43	HG130517-4	10		9.95	ng/L	99.5	76.5	123.4			
WG347365CCB3	CCB	07/11/13 15:50				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02006		.02012	mg/L	100.3	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05		.04835	mg/L	96.7	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05	.0011	.04741	mg/L	92.6	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05	.0011	.04968	mg/L	97.2	70	130	4.68	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05	.0035	.05147	mg/L	95.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05	.0035	.05116	mg/L	95.3	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.02006		.01939	mg/L	96.7	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0015	0.0015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.0011	0.0011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05		.04765	mg/L	95.3	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05	.0035	.05178	mg/L	96.6	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05	.0035	.05133	mg/L	95.7	70	130	0.87	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05279	mg/L	105.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0018	0.0018			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05114	mg/L	102.2	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.04666	mg/L	93.2	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.04857	mg/L	97	70	130	4.01	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0006	.04799	mg/L	94.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0006	.04864	mg/L	96	70	130	1.35	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05059	mg/L	101.2	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0018	0.0018			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00132	0.00132			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.0482	mg/L	96.3	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0008	.04808	mg/L	94.5	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0008	.0479	mg/L	94.1	70	130	0.38	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347124													
WG347124ICV	ICV	07/08/13 12:58	WI121105-5	1.003		.973	mg/L	97	90	110			
WG347124ICB	ICB	07/08/13 13:01				U	mg/L		-0.15	0.15			
WG347161													
WG347161LFB1	LFB	07/08/13 16:54	WI121218-3	1		.982	mg/L	98.2	90	110			
WG347161ICV	ICV	07/08/13 17:47	WI121105-5	1.003		.975	mg/L	97.2	90	110			
WG347161ICB	ICB	07/08/13 17:50				U	mg/L		-0.15	0.15			
WG347161LFB2	LFB	07/08/13 18:10	WI121218-3	1		1.042	mg/L	104.2	90	110			
L13030-06AS	AS	07/08/13 18:12	WI121218-3	1	U	1.019	mg/L	101.9	90	110			
L13030-07DUP	DUP	07/08/13 18:14			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13032***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346808													
WG346808LCSW3	LCSW	07/01/13 17:10	PCN40853	6		5.99	units	99.8	98	102			
WG346808LCSW6	LCSW	07/01/13 20:08	PCN40853	6		6.01	units	100.2	98	102			
WG346808LCSW9	LCSW	07/01/13 23:12	PCN40853	6		6.01	units	100.2	98	102			
L13032-01DUP	DUP	07/02/13 3:05			8.3	8.37	units				0.8	20	
WG346808LCSW12	LCSW	07/02/13 3:22	PCN40853	6		6	units	100	98	102			
L13032-04DUP	DUP	07/02/13 4:04			8.4	8.46	units				0.7	20	
WG346808LCSW15	LCSW	07/02/13 4:21	PCN40853	6		6	units	100	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347250													
WG347250ICV	ICV	07/09/13 14:53	WI130620-3	.65228		.633	mg/L	97	90	110			
WG347250ICB	ICB	07/09/13 14:54				U	mg/L		-0.03	0.03			
WG347256													
WG347133LRB	LRB	07/09/13 17:06				U	mg/L		-0.03	0.03			
WG347133LFB	LFB	07/09/13 17:07	WI130705-2	.5		.53	mg/L	106	90	110			
L13031-02LFM	LFM	07/09/13 17:09	WI130705-2	.5	.03	.542	mg/L	102.4	90	110			
L13031-03DUP	DUP	07/09/13 17:11			.04	.034	mg/L				16.2	20	RA
L13032-04LFM	LFM	07/09/13 17:24	WI130705-2	.5	.02	.527	mg/L	101.4	90	110			
L13046-16DUP	DUP	07/09/13 17:55			1.05	1.051	mg/L				0.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	20		20.16	mg/L	100.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	99.96112		100.6	mg/L	100.6	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	99.96112	.6	100.3	mg/L	99.7	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	99.96112	.6	100.7	mg/L	100.1	85	115	0.4	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	20		19.82	mg/L	99.1	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	99.96112		97.83	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	99.96112	5.8	102.2	mg/L	96.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	99.96112	5.8	100.5	mg/L	94.7	70	130	1.68	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346839													
WG346839PBW	PBW	07/02/13 10:55				U	mg/L		-15	15			
WG346839LCSW	LCSW	07/02/13 10:56	PCN42878	160		149	mg/L	93.1	80	120			
L13030-07DUP	DUP	07/02/13 11:16			71	72	mg/L				1.4	10	
WG346926													
WG346926PBW	PBW	07/03/13 8:40				U	mg/L		-15	15			
WG346926LCSW	LCSW	07/03/13 8:41	PCN42878	160		158	mg/L	98.8	80	120			
L13032-02DUP	DUP	07/03/13 9:08			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.01	mg/L	100.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0009		1.05	mg/L	104.9	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.92	mg/L	96	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0009		1.01	mg/L	100.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0009	U	.98	mg/L	97.9	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0009	U	.97	mg/L	96.9	70	130	1.03	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05509	mg/L	110.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05133	mg/L	102.6	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	.0001	.05146	mg/L	102.6	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	.0001	.05509	mg/L	109.9	70	130	6.81	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0002	.05349	mg/L	106.5	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0002	.05344	mg/L	106.4	70	130	0.09	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05279	mg/L	105.6	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04886	mg/L	97.6	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	.0003	.04966	mg/L	98.6	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	.0003	.04947	mg/L	98.2	70	130	0.38	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02002		.02074	mg/L	103.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.01001		.009802	mg/L	97.9	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.01001	U	.008351	mg/L	83.4	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.01001	U	.0091	mg/L	90.9	70	130	8.58	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.01001	U	.008807	mg/L	88	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.01001	U	.008673	mg/L	86.6	70	130	1.53	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.02002		.01996	mg/L	99.7	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.00015	0.00015			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00011	0.00011			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.01001		.009554	mg/L	95.4	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.01001	U	.009342	mg/L	93.3	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.01001	U	.009311	mg/L	93	70	130	0.33	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		100.7	mg/L	100.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	100.0495		100.9	mg/L	100.9	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	100.0495	316	407.6	mg/L	91.6	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	100.0495	316	405.7	mg/L	89.7	85	115	0.47	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.87	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	100.0495		97.32	mg/L	97.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	100.0495	110	203	mg/L	93	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	100.0495	110	199.3	mg/L	89.3	70	130	1.84	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.054	mg/L	102.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.511	mg/L	102.2	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	.5	.39	.886	mg/L	99.2	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	.5	.39	.888	mg/L	99.6	85	115	0.23	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.977	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.484	mg/L	96.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.48	mg/L	96	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.472	mg/L	94.4	70	130	1.68	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05415	mg/L	108.3	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05203	mg/L	104	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.05104	mg/L	102	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.05271	mg/L	105.3	70	130	3.22	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.05221	mg/L	104.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.05143	mg/L	102.8	70	130	1.51	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05333	mg/L	106.7	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04945	mg/L	98.8	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	U	.04972	mg/L	99.3	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	U	.05021	mg/L	100.3	70	130	0.98	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05015		.05222	mg/L	104.1	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04558	mg/L	91.1	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05005	U	.042	mg/L	83.9	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05005	U	.04418	mg/L	88.3	70	130	5.06	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04402	mg/L	88	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04402	mg/L	88	70	130	0	20	

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ACZ Project ID: ***L13032***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05015		.05054	mg/L	100.8	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05005		.04643	mg/L	92.8	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05005	U	.04785	mg/L	95.6	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05005	U	.04567	mg/L	91.2	70	130	4.66	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0275	mg/L	101.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.015	0.015			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.033	mg/L	103.3	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	1	U	1.034	mg/L	103.4	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	1	U	1.035	mg/L	103.5	85	115	0.1	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9495	mg/L	97.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.015	0.015			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.011	0.011			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.997	mg/L	99.7	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.9898	mg/L	99	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.9777	mg/L	97.8	70	130	1.23	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05288	mg/L	105.8	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05		.05079	mg/L	101.6	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.05	.0002	.0502	mg/L	100	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.05	.0002	.05189	mg/L	103.4	70	130	3.31	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05	.0014	.0527	mg/L	102.6	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05	.0014	.05187	mg/L	100.9	70	130	1.59	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.05278	mg/L	105.6	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0003	0.0003			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00022	0.00022			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.05		.04997	mg/L	99.9	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.05	.0015	.05362	mg/L	104.2	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.05	.0015	.05314	mg/L	103.3	70	130	0.9	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05088	mg/L	101.8	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0006	0.0006			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.05098	mg/L	101.8	85	115			
L13031-03AS	AS	07/12/13 2:40	MS130614-1	.0501	.0005	.04939	mg/L	97.6	70	130			
L13031-03ASD	ASD	07/12/13 2:43	MS130614-1	.0501	.0005	.05144	mg/L	101.7	70	130	4.07	20	
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	.0045	.05429	mg/L	99.4	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	.0045	.05528	mg/L	101.4	70	130	1.81	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04707	mg/L	94.1	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0006	0.0006			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.0501		.04942	mg/L	98.6	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.0501	.027	.07561	mg/L	97	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.0501	.027	.07594	mg/L	97.7	70	130	0.44	20	
WG347530													
WG347530ICV	ICV	07/13/13 22:18	MS130416-2	.05		.04938	mg/L	98.8	90	110			
WG347530ICB	ICB	07/13/13 22:21				U	mg/L		-0.0006	0.0006			
WG347530LFB	LFB	07/13/13 22:24	MS130614-1	.0501		.05187	mg/L	103.5	85	115			
L13105-01AS	AS	07/13/13 22:47	MS130614-1	.0501	U	.05215	mg/L	104.1	70	130			
L13105-01ASD	ASD	07/13/13 22:50	MS130614-1	.0501	U	.05178	mg/L	103.4	70	130	0.71	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347452													
WG347452ICV	ICV	07/12/13 4:55	MS130416-2	.05		.04846	mg/L	96.9	90	110			
WG347452ICB	ICB	07/12/13 4:58				U	mg/L		-0.0006	0.0006			
WG347211LRB	LRB	07/12/13 5:02				U	mg/L		-0.00044	0.00044			
WG347211LFB	LFB	07/12/13 5:05	MS130614-1	.0501		.04862	mg/L	97	85	115			
L13032-04LFM	LFM	07/12/13 5:40	MS130614-1	.0501	.005	.05358	mg/L	97	70	130			
L13032-04LFMD	LFMD	07/12/13 5:43	MS130614-1	.0501	.005	.05338	mg/L	96.6	70	130	0.37	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.958	mg/L	97.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.513	mg/L	102.6	85	115			
L13011-03AS	AS	07/08/13 23:44	II130708-3	.5	U	.512	mg/L	102.4	85	115			
L13011-03ASD	ASD	07/08/13 23:47	II130708-3	.5	U	.512	mg/L	102.4	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.946	mg/L	97.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.504	mg/L	100.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.496	mg/L	99.2	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.486	mg/L	97.2	70	130	2.04	20	

SPF Water Engineering

ACZ Project ID: ***L13032***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13032-01	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346808	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347370	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347242	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347161	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346839	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
	WG346808	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13032***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13032-02	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG347365	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG347432	Vanadium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346808	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347370	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347242	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347161	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346926	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13032***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13032-03	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG347365	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG347432	Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346808	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347370	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347242	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347161	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346926	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13032***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13032-04	WG347677	Total Hot Plate Digestion	M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.
	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG346808	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347370	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347242	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347161	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346926	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346808	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L13032
Date Received: 07/01/2013 10:09
Received By: gac
Date Printed: 7/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L13032-01 : HG-1631's not in sealed double bags.

L13032-02 : HG-1631's not in sealed double bags.

L13032-03 : HG-1631's not in sealed double bags.

L13032-04 : HG-1631's not in sealed double bags.

L13032-05 : HG-1631 not in sealed double bags.

16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
4110	20.9	13	Yes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID:	L13032
Date Received:	07/01/2013 10:09
Received By:	gac
Date Printed:	7/2/2013

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

C13032

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013-GW	HG-trip Blank
Lowe Spring	6/26/13 9:20		7	X	
Poison Spring	6/26/13 10:55		7	X	
Negro Rock Canyon Creek	6/26/13 12:00		7	X	
Owyhee River	6/26/13 5:00		7	X	
HG Trip Blank	6/26/13 5:30		1		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/27/13 9:08		
			7-1-13 10:09

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13032 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13047

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 02, 2013. This project has been assigned to ACZ's project number, L13047. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13047. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 18, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 19, 2013

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13047

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on July 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13047. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report:

1. For L13047-01, the dissolved and total cobalt values were verified by re-digestion and re-analysis with no significant change.

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L13047-01***
Date Sampled: *06/27/13 09:00*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/10/13 11:59	mla
Cyanide, WAD	SM4500-CN I- distillation								07/10/13 20:06	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 15:44	mla
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/13 11:04	las
Total Hot Plate Digestion	M200.2 ICP								07/09/13 10:12	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L13047-01***
Date Sampled: *06/27/13 09:00*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:15	jjc
Aluminum, total	M200.7 ICP	1	1.34			mg/L	0.03	0.2	07/09/13 23:41	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 0:52	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 7:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0111			mg/L	0.0002	0.001	07/12/13 0:52	msh
Arsenic, total	M200.8 ICP-MS	1	0.0114			mg/L	0.0002	0.001	07/12/13 7:20	pmc
Barium, dissolved	M200.7 ICP	1	0.028			mg/L	0.003	0.02	07/09/13 0:15	jjc
Barium, total	M200.7 ICP	1	0.042			mg/L	0.003	0.02	07/09/13 23:41	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/13/13 1:47	msh
Beryllium, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/12/13 7:20	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:15	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:41	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/09/13 0:15	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/11/13 14:22	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 0:52	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:20	pmc
Calcium, dissolved	M200.7 ICP	1	21.5			mg/L	0.2	1	07/09/13 0:15	jjc
Calcium, total	M200.7 ICP	1	21.4			mg/L	0.2	1	07/09/13 23:41	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 0:52	msh
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/12/13 7:20	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00216			mg/L	0.00005	0.0003	07/12/13 0:52	msh
Cobalt, total	M200.8 ICP-MS	1	0.00054			mg/L	0.00005	0.0003	07/12/13 7:20	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	07/12/13 0:52	msh
Copper, total	M200.8 ICP-MS	1	0.0021	B		mg/L	0.0005	0.003	07/13/13 3:49	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:15	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:41	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:15	jjc
Iron, total	M200.7 ICP	1	1.15			mg/L	0.02	0.05	07/09/13 23:41	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 0:52	msh
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	07/13/13 3:49	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	07/09/13 0:15	jjc
Lithium, total	M200.7 ICP	1	0.03	B		mg/L	0.02	0.1	07/09/13 23:41	aeb
Magnesium, dissolved	M200.7 ICP	1	6.2			mg/L	0.2	1	07/09/13 0:15	jjc
Magnesium, total	M200.7 ICP	1	6.3			mg/L	0.2	1	07/09/13 23:41	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0184			mg/L	0.0005	0.003	07/12/13 0:52	msh
Manganese, total	M200.8 ICP-MS	1	0.0662			mg/L	0.0005	0.003	07/12/13 7:20	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	2	1.4			ng/L	0.4	1	07/09/13 16:36	las
Mercury, total	M1631, Atomic Fluorescence	5	23			ng/L	1	3	07/11/13 14:16	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0066			mg/L	0.0005	0.003	07/12/13 0:52	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0066			mg/L	0.0005	0.003	07/12/13 7:20	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0006	0.003	07/12/13 0:52	msh
Nickel, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0006	0.003	07/12/13 7:20	pmc
Potassium, dissolved	M200.7 ICP	1	4.9			mg/L	0.3	2	07/09/13 0:15	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L13047-01***
Date Sampled: *06/27/13 09:00*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.0			mg/L	0.3	2	07/09/13 23:41	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:15	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:41	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	07/12/13 0:52	msh
Selenium, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0003	07/12/13 7:20	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 0:52	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:20	pmc
Sodium, dissolved	M200.7 ICP	1	49.0			mg/L	0.3	2	07/09/13 0:15	jjc
Sodium, total	M200.7 ICP	1	47.8			mg/L	0.3	2	07/09/13 23:41	aeb
Strontium, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/09/13 0:15	jjc
Strontium, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/09/13 23:41	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 0:52	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:20	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 0:52	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	07/12/13 7:20	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:15	jjc
Titanium, total	M200.7 ICP	1	0.047			mg/L	0.005	0.03	07/09/13 23:41	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	07/12/13 0:52	msh
Uranium, total	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	07/12/13 7:20	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0100			mg/L	0.0002	0.001	07/12/13 0:52	msh
Vanadium, total	M200.8 ICP-MS	1	0.0129			mg/L	0.0002	0.001	07/12/13 7:20	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:15	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/09/13 23:41	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	139		*	mg/L	2	20	07/04/13 0:00	abm
Carbonate as CaCO3		1	4	B	*	mg/L	2	20	07/04/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Total Alkalinity		1	143		*	mg/L	2	20	07/04/13 0:00	abm
Conductivity @25C	SM2510B	1	373		*	umhos/cm	1	10	07/04/13 0:52	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/10/13 23:05	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:15	mpb
Hardness as CaCO3	SM2340B - Calculation		79			mg/L	1	7	07/19/13 13:57	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.12	B	*	mg/L	0.05	0.5	07/10/13 12:34	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	07/04/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.08		*	mg/L	0.01	0.05	07/09/13 17:33	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	26		*	mg/L	5	20	07/03/13 11:08	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L13047-02***
Date Sampled: *06/27/13 14:20*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/11/13 11:44	mla
Cyanide, WAD	SM4500-CN I- distillation								07/10/13 20:56	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 15:50	mla
Total Hot Plate Digestion	M200.2 ICP-MS								07/16/13 12:00	scp
Total Hot Plate Digestion	M200.2 ICP								07/09/13 10:24	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L13047-02***
Date Sampled: *06/27/13 14:20*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.08	B		mg/L	0.03	0.2	07/09/13 0:18	jjc
Aluminum, total	M200.7 ICP	1	0.64			mg/L	0.03	0.2	07/09/13 23:44	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 0:55	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 7:23	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0057			mg/L	0.0002	0.001	07/12/13 0:55	msh
Arsenic, total	M200.8 ICP-MS	1	0.0057			mg/L	0.0002	0.001	07/12/13 7:23	pmc
Barium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.003	0.02	07/09/13 0:18	jjc
Barium, total	M200.7 ICP	1	0.019	B		mg/L	0.003	0.02	07/09/13 23:44	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/13/13 1:58	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:23	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:18	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:44	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	07/09/13 0:18	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/11/13 14:25	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 0:55	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:23	pmc
Calcium, dissolved	M200.7 ICP	1	20.0			mg/L	0.2	1	07/09/13 0:18	jjc
Calcium, total	M200.7 ICP	1	19.8			mg/L	0.2	1	07/09/13 23:44	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 0:55	msh
Chromium, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	07/12/13 7:23	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00039			mg/L	0.00005	0.0003	07/12/13 0:55	msh
Cobalt, total	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	07/12/13 7:23	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0128			mg/L	0.0005	0.003	07/12/13 0:55	msh
Copper, total	M200.8 ICP-MS	1	0.0021	B		mg/L	0.0005	0.003	07/18/13 3:43	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:18	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:44	aeb
Iron, dissolved	M200.7 ICP	1	0.07			mg/L	0.02	0.05	07/09/13 0:18	jjc
Iron, total	M200.7 ICP	1	0.59			mg/L	0.02	0.05	07/09/13 23:44	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	07/12/13 0:55	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/13/13 3:51	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 0:18	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 23:44	aeb
Magnesium, dissolved	M200.7 ICP	1	5.3			mg/L	0.2	1	07/09/13 0:18	jjc
Magnesium, total	M200.7 ICP	1	5.3			mg/L	0.2	1	07/09/13 23:44	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	07/12/13 0:55	msh
Manganese, total	M200.8 ICP-MS	1	0.0163			mg/L	0.0005	0.003	07/12/13 7:23	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	2	0.7	B	*	ng/L	0.4	1	07/09/13 16:43	las
Mercury, total	M1631, Atomic Fluorescence	5	4			ng/L	1	3	07/11/13 14:23	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	07/12/13 0:55	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	07/12/13 7:23	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0006	0.003	07/12/13 0:55	msh
Nickel, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0006	0.003	07/12/13 7:23	pmc
Potassium, dissolved	M200.7 ICP	1	3.5			mg/L	0.3	2	07/09/13 0:18	jjc

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ACZ Sample ID: ***L13047-02***
Date Sampled: *06/27/13 14:20*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	3.5			mg/L	0.3	2	07/09/13 23:44	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:18	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:44	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	07/12/13 0:55	msh
Selenium, total	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	07/12/13 7:23	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 0:55	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:23	pmc
Sodium, dissolved	M200.7 ICP	1	26.9			mg/L	0.3	2	07/09/13 0:18	jjc
Sodium, total	M200.7 ICP	1	26.3			mg/L	0.3	2	07/09/13 23:44	aeb
Strontium, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/09/13 0:18	jjc
Strontium, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/09/13 23:44	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 0:55	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:23	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 0:55	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:23	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:18	jjc
Titanium, total	M200.7 ICP	1	0.033			mg/L	0.005	0.03	07/09/13 23:44	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0005	07/12/13 0:55	msh
Uranium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0005	07/12/13 7:23	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0051			mg/L	0.0002	0.001	07/12/13 0:55	msh
Vanadium, total	M200.8 ICP-MS	1	0.0069			mg/L	0.0002	0.001	07/12/13 7:23	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:18	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:44	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	86		*	mg/L	2	20	07/04/13 0:00	abm
Carbonate as CaCO3		1	5	B	*	mg/L	2	20	07/04/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Total Alkalinity		1	91		*	mg/L	2	20	07/04/13 0:00	abm
Conductivity @25C	SM2510B	1	261		*	umhos/cm	1	10	07/04/13 1:01	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:56	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:16	mpb
Hardness as CaCO3	SM2340B - Calculation		72			mg/L	1	7	07/19/13 13:57	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/10/13 12:35	bsu
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	07/04/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	07/09/13 17:34	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5	B	*	mg/L	5	20	07/03/13 11:09	mss3

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13047***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995PBW1	PBW	07/03/13 17:11				U	mg/L		-20	20			
WG346995LCSW2	LCSW	07/03/13 17:24	WC130625-	820.0001		777	mg/L	94.8	90	110			
WG346995LCSW5	LCSW	07/03/13 20:41	WC130625-	820.0001		788.2	mg/L	96.1	90	110			
WG346995PBW2	PBW	07/03/13 20:49				2.7	mg/L		-20	20			
WG346995LCSW8	LCSW	07/03/13 23:48	WC130625-	820.0001		776.4	mg/L	94.7	90	110			
WG346995PBW3	PBW	07/03/13 23:56				2.4	mg/L		-20	20			
L13050-01DUP	DUP	07/04/13 1:36			U	U	mg/L				0	20	RA
WG346995LCSW11	LCSW	07/04/13 3:07	WC130625-	820.0001		776.2	mg/L	94.7	90	110			
WG346995PBW4	PBW	07/04/13 3:15				2.6	mg/L		-20	20			
WG346995LCSW14	LCSW	07/04/13 6:16	WC130625-	820.0001		783	mg/L	95.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.037	mg/L	101.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.09	0.09			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0011		1.044	mg/L	104.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0011	.08	1.138	mg/L	105.7	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0011	.08	1.143	mg/L	106.2	85	115	0.44	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.986	mg/L	99.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.09	0.09			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.066	0.066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0011		1.007	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0011	U	.995	mg/L	99.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0011	U	.983	mg/L	98.2	70	130	1.21	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.02		.02147	mg/L	107.4	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0012	0.0012			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.01		.00949	mg/L	94.9	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.01	U	.00835	mg/L	83.5	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.01	U	.00869	mg/L	86.9	70	130	3.99	20	

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ACZ Project ID: ***L13047***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02		.02062	mg/L	103.1	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0012	0.0012			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00088	0.00088			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.01		.01038	mg/L	103.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.01	U	.01044	mg/L	104.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.01	U	.01043	mg/L	104.3	70	130	0.1	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05092	mg/L	101.8	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0006	0.0006			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04742	mg/L	94.7	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.0004	.05184	mg/L	102.8	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.0004	.05245	mg/L	104	70	130	1.17	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05152	mg/L	103	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0006	0.0006			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00044	0.00044			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.05103	mg/L	102	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0004	.05044	mg/L	100	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0004	.04981	mg/L	98.7	70	130	1.26	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0295	mg/L	101.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.009	0.009			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.5063	mg/L	101.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	.011	.5154	mg/L	100.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	.011	.5196	mg/L	101.7	85	115	0.81	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9378	mg/L	96.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.009	0.009			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.0066	0.0066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.4766	mg/L	95.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	.005	.467	mg/L	92.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	.005	.4601	mg/L	91	70	130	1.49	20	

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ACZ Project ID: ***L13047***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347511													
WG347511ICV	ICV	07/13/13 1:37	MS130416-2	.05		.04746	mg/L	94.9	90	110			
WG347511ICB	ICB	07/13/13 1:40				U	mg/L		-0.00015	0.00015			
WG347511LFB	LFB	07/13/13 1:44	MS130614-1	.0501		.0478	mg/L	95.4	85	115			
L13047-01AS	AS	07/13/13 1:51	MS130614-1	.0501	U	.05	mg/L	99.8	70	130			
L13047-01ASD	ASD	07/13/13 1:54	MS130614-1	.0501	U	.05162	mg/L	103	70	130	3.19	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04696	mg/L	93.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04685	mg/L	93.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	U	.0468	mg/L	93.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	U	.0471	mg/L	94	70	130	0.64	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.995	mg/L	99.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.12	0.12			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.007	mg/L	100.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	.988	mg/L	98.8	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.001	mg/L	100.1	85	115	1.31	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.971	mg/L	98.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.12	0.12			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.088	0.088			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.016	mg/L	101.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.011	mg/L	101.1	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.977	mg/L	97.7	70	130	3.42	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.047	mg/L	102.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5005		.514	mg/L	102.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5005	.08	.592	mg/L	102.3	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5005	.08	.601	mg/L	104.1	85	115	1.51	20	

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ACZ Project ID: ***L13047***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		2.016	mg/L	100.8	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5005		.482	mg/L	96.3	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5005	.12	.604	mg/L	96.7	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5005	.12	.607	mg/L	97.3	70	130	0.5	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05	mg/L	100	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.0501		.04726	mg/L	94.3	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.0501	U	.04912	mg/L	98	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.0501	U	.04974	mg/L	99.3	70	130	1.25	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05094	mg/L	101.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04936	mg/L	98.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	.0009	.04971	mg/L	97.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	.0009	.04899	mg/L	96	70	130	1.46	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		99.86	mg/L	99.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	68.0028		71.18	mg/L	104.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	68.0028	20	89.99	mg/L	102.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	68.0028	20	90.37	mg/L	103.5	85	115	0.42	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.28	mg/L	98.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	68.0028		68.43	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	68.0028	1.1	69.08	mg/L	100	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	68.0028	1.1	67.97	mg/L	98.3	70	130	1.62	20	

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ACZ Project ID: ***L13047***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.0488	mg/L	97.6	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0015	0.0015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.0461	mg/L	92.1	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	U	.04596	mg/L	91.8	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	U	.04633	mg/L	92.6	70	130	0.8	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04882	mg/L	97.6	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.0473	mg/L	94.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0008	.04803	mg/L	94.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0008	.04781	mg/L	93.9	70	130	0.46	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.0469	mg/L	93.8	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.00015	0.00015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04604	mg/L	92	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.00018	.04455	mg/L	88.7	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.00018	.0448	mg/L	89.2	70	130	0.56	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05058	mg/L	101.2	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04897	mg/L	97.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.00067	.04951	mg/L	97.6	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.00067	.04885	mg/L	96.3	70	130	1.34	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995LCSW1	LCSW	07/03/13 17:12	PCN42820	1408.8		1448.7	µmhos/cm	102.8	90	110			
WG346995LCSW4	LCSW	07/03/13 20:29	PCN42820	1408.8		1420.1	µmhos/cm	100.8	90	110			
WG346995LCSW7	LCSW	07/03/13 23:37	PCN42820	1408.8		1397.7	µmhos/cm	99.2	90	110			
L13050-01DUP	DUP	07/04/13 1:36			1440	1437	µmhos/cm				0.2	20	
WG346995LCSW10	LCSW	07/04/13 2:56	PCN42820	1408.8		1380.4	µmhos/cm	98	90	110			
WG346995LCSW13	LCSW	07/04/13 6:04	PCN42820	1408.8		1370.2	µmhos/cm	97.3	90	110			

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ACZ Project ID: ***L13047***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.0482	mg/L	96.4	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0015	0.0015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04459	mg/L	89.1	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.0007	.04484	mg/L	88.2	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.0007	.04533	mg/L	89.2	70	130	1.09	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347525													
WG347525ICV	ICV	07/13/13 3:38	MS130416-2	.05		.05016	mg/L	100.3	90	110			
WG347525ICB	ICB	07/13/13 3:41				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/13/13 3:43				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/13/13 3:46	MS130614-1	.05005		.05099	mg/L	101.9	85	115			
L13067-01LFM	LFM	07/13/13 4:00	MS130614-1	.05005	.0014	.05077	mg/L	98.6	70	130			
L13067-01LFMD	LFMD	07/13/13 4:02	MS130614-1	.05005	.0014	.05078	mg/L	98.7	70	130	0.02	20	
WG347782													
WG347782ICV	ICV	07/18/13 3:21	MS130717-9	.05		.04915	mg/L	98.3	90	110			
WG347782ICB	ICB	07/18/13 3:24				U	mg/L		-0.0015	0.0015			
WG347677LRB	LRB	07/18/13 3:27				U	mg/L		-0.0011	0.0011			
WG347677LFB	LFB	07/18/13 3:30	MS130614-1	.05005		.0489	mg/L	97.7	85	115			
L13179-02LFM	LFM	07/18/13 3:53	MS130614-1	.05005	.0074	.05281	mg/L	90.7	70	130			
L13179-02LFMD	LFMD	07/18/13 4:02	MS130614-1	.05005	.0074	.05173	mg/L	88.6	70	130	2.07	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347370													
WG347370ICV	ICV	07/10/13 22:36	WI130708-6	.3		.287	mg/L	95.7	90	110			
WG347370ICB	ICB	07/10/13 22:37				U	mg/L		-0.003	0.003			
WG347291LRB	LRB	07/10/13 22:39				U	mg/L		-0.003	0.003			
WG347291LFB	LFB	07/10/13 22:40	WI130708-2	.2		.2073	mg/L	103.7	90	110			
L13004-05DUP	DUP	07/10/13 22:54			U	U	mg/L				0	20	RA
L13004-06LFM	LFM	07/10/13 22:56	WI130708-2	.2	U	.1915	mg/L	95.8	90	110			
WG347421													
WG347421ICV	ICV	07/11/13 14:08	WI130708-6	.3		.2842	mg/L	94.7	90	110			
WG347421ICB	ICB	07/11/13 14:09				U	mg/L		-0.003	0.003			
WG347426													
WG347404LRB	LRB	07/11/13 14:54				U	mg/L		-0.003	0.003			
WG347404LFB	LFB	07/11/13 14:55	WI130708-2	.2		.1979	mg/L	99	90	110			
L13047-02DUP	DUP	07/11/13 14:57			U	U	mg/L				0	20	RA
L13048-01LFM	LFM	07/11/13 14:59	WI130708-2	.2	U	.195	mg/L	97.5	90	110			

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ACZ Project ID: ***L13047***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347421													
WG347421ICV	ICV	07/11/13 14:08	WI130708-6	.3		.2842	mg/L	94.7	90	110			
WG347421ICB	ICB	07/11/13 14:09				U	mg/L		-0.003	0.003			
WG347335LRB	LRB	07/11/13 14:10				U	mg/L		-0.003	0.003			
WG347335LFB	LFB	07/11/13 14:11	WI130708-4	.2		.1922	mg/L	96.1	90	110			
L13001-06DUP	DUP	07/11/13 14:12			U	U	mg/L				0	20	RA
L13001-07LFM	LFM	07/11/13 14:14	WI130708-4	.2	U	.1727	mg/L	86.4	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.07	mg/L	103.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.04	mg/L	104	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.04	mg/L	104	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.05	mg/L	105	85	115	0.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.99	mg/L	99.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.03	mg/L	103	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.03	mg/L	103	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	1.01	mg/L	101	70	130	1.96	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.003	mg/L	100.2	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0014		1.021	mg/L	102	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0014	.07	1.093	mg/L	102.2	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0014	.07	1.1	mg/L	102.9	85	115	0.64	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.963	mg/L	98.2	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0014		.979	mg/L	97.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0014	U	.957	mg/L	95.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0014	U	.948	mg/L	94.7	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05168	mg/L	103.4	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04831	mg/L	96.5	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	U	.04852	mg/L	96.9	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	U	.04865	mg/L	97.2	70	130	0.27	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347525													
WG347525ICV	ICV	07/13/13 3:38	MS130416-2	.05		.05215	mg/L	104.3	90	110			
WG347525ICB	ICB	07/13/13 3:41				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/13/13 3:43				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/13/13 3:46	MS130614-1	.05005		.04844	mg/L	96.8	85	115			
L13067-01LFM	LFM	07/13/13 4:00	MS130614-1	.05005	.0025	.05155	mg/L	98	70	130			
L13067-01LFMD	LFMD	07/13/13 4:02	MS130614-1	.05005	.0025	.05124	mg/L	97.4	70	130	0.6	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.04	mg/L	102	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.021	mg/L	102.1	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.025	mg/L	102.5	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.028	mg/L	102.8	85	115	0.29	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.952	mg/L	97.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.995	mg/L	99.5	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.977	mg/L	97.7	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.966	mg/L	96.6	70	130	1.13	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		98.9	mg/L	98.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	49.99752		50.08	mg/L	100.2	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	49.99752	5.3	55.22	mg/L	99.8	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	49.99752	5.3	55.48	mg/L	100.4	85	115	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		97.76	mg/L	97.8	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	49.99752		48.97	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	49.99752	U	48.32	mg/L	96.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	49.99752	U	47.34	mg/L	94.7	70	130	2.05	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.04803	mg/L	96.1	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0015	0.0015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04619	mg/L	92.3	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.005	.05233	mg/L	94.6	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.005	.05287	mg/L	95.6	70	130	1.03	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.0507	mg/L	101.4	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04878	mg/L	97.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.1275	.1749	mg/L	94.7	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.1275	.1728	mg/L	90.5	70	130	1.21	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347159													
WG347159ICV	ICV	07/09/13 13:14	HG130517-4	10		10.58	ng/L	105.8	79	121			
WG347159ICB	ICB	07/09/13 13:21				U	ng/L		-0.5	0.5			
WG347159PQV	PQV	07/09/13 13:27	HG130517-6	.5		.43	ng/L	86	70	130			
WG347159LFB	LFB	07/09/13 13:34	HG130517-5	2		2.05	ng/L	102.5	71	125			
WG347159CCV1	CCV	07/09/13 15:56	HG130517-4	10		8.58	ng/L	85.8	76.5	123.4			
WG347159CCB1	CCB	07/09/13 16:03				U	ng/L		-0.5	0.5			
WG347159CCV2	CCV	07/09/13 16:50	HG130517-4	10		9.06	ng/L	90.6	76.5	123.4			
WG347159CCB2	CCB	07/09/13 16:56				U	ng/L		-0.5	0.5			
L13048-04MS	MS	07/09/13 17:30	HG2XPREP	8	1.1	4.23	ng/L	78.3	71	125			
L13048-04MSD	MSD	07/09/13 17:36	HG2XPREP	8	1.1	4.66	ng/L	89	71	125	9.67	24	
WG347159CCV3	CCV	07/09/13 17:43	HG130517-4	10		10.06	ng/L	100.6	76.5	123.4			
WG347159CCB3	CCB	07/09/13 17:50				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L13047***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347365													
WG347365ICV	ICV	07/11/13 12:36	HG130517-4	10		10.44	ng/L	104.4	79	121			
WG347365ICB	ICB	07/11/13 12:42				U	ng/L		-0.5	0.5			
WG347365PQV	PQV	07/11/13 12:49	HG130517-6	.5		.54	ng/L	108	70	130			
WG347365LFB	LFB	07/11/13 12:55	HG130517-5	2		1.96	ng/L	98	71	125			
L13032-01MS	MS	07/11/13 13:30	HG2XPREP	8	1.5	5.05	ng/L	88.8	71	125			
L13032-01MSD	MSD	07/11/13 13:36	HG2XPREP	8	1.5	4.82	ng/L	83	71	125	4.66	24	
WG347365CCV1	CCV	07/11/13 14:03	HG130517-4	10		9.01	ng/L	90.1	76.5	123.4			
WG347365CCB1	CCB	07/11/13 14:10				U	ng/L		-0.5	0.5			
WG347365CCV2	CCV	07/11/13 14:56	HG130517-4	10		9.25	ng/L	92.5	76.5	123.4			
WG347365CCB2	CCB	07/11/13 15:03				U	ng/L		-0.5	0.5			
WG347365CCV3	CCV	07/11/13 15:43	HG130517-4	10		9.95	ng/L	99.5	76.5	123.4			
WG347365CCB3	CCB	07/11/13 15:50				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.02006		.01968	mg/L	98.1	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0015	0.0015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05		.04776	mg/L	95.5	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05	.0008	.04737	mg/L	93.1	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05	.0008	.04801	mg/L	94.4	70	130	1.34	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02006		.01971	mg/L	98.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05		.04786	mg/L	95.7	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05	U	.04819	mg/L	96.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05	U	.04781	mg/L	95.6	70	130	0.79	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.04998	mg/L	100	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0018	0.0018			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04608	mg/L	92.1	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.0008	.04516	mg/L	88.6	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.0008	.04568	mg/L	89.7	70	130	1.14	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05167	mg/L	103.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0018	0.0018			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00132	0.00132			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04888	mg/L	97.7	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0048	.05277	mg/L	95.8	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0048	.05311	mg/L	96.5	70	130	0.64	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347305													
WG347305ICV	ICV	07/10/13 12:15	WI121105-5	1.003		1.002	mg/L	99.9	90	110			
WG347305ICB	ICB	07/10/13 12:18				U	mg/L		-0.15	0.15			
WG347305LFB1	LFB	07/10/13 12:19	WI121218-3	1		.989	mg/L	98.9	90	110			
L13031-01AS	AS	07/10/13 12:21	WI121218-3	1	U	1.014	mg/L	101.4	90	110			
L13031-02DUP	DUP	07/10/13 12:23			U	U	mg/L				0	20	RA
L13047-02AS	AS	07/10/13 12:36	WI121218-3	1	U	.991	mg/L	99.1	90	110			
L13048-01DUP	DUP	07/10/13 12:38			U	U	mg/L				0	20	RA
WG347305LFB2	LFB	07/10/13 12:50	WI121218-3	1		.973	mg/L	97.3	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995LCSW3	LCSW	07/03/13 17:27	PCN40853	6		5.99	units	99.8	98	102			
WG346995LCSW6	LCSW	07/03/13 20:44	PCN40853	6		6.01	units	100.2	98	102			
WG346995LCSW9	LCSW	07/03/13 23:51	PCN40853	6		6.01	units	100.2	98	102			
L13050-01DUP	DUP	07/04/13 1:36			4	3.8	units				5.1	20	
WG346995LCSW12	LCSW	07/04/13 3:10	PCN40853	6		6.02	units	100.3	98	102			
WG346995LCSW15	LCSW	07/04/13 6:19	PCN40853	6		6.02	units	100.3	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347250													
WG347250ICV	ICV	07/09/13 14:53	WI130620-3	.65228		.633	mg/L	97	90	110			
WG347250ICB	ICB	07/09/13 14:54				U	mg/L		-0.03	0.03			
WG347256													
WG347133LRB	LRB	07/09/13 17:06				U	mg/L		-0.03	0.03			
WG347133LFB	LFB	07/09/13 17:07	WI130705-2	.5		.53	mg/L	106	90	110			
L13032-04LFM	LFM	07/09/13 17:24	WI130705-2	.5	.02	.527	mg/L	101.4	90	110			
L13046-16DUP	DUP	07/09/13 17:55			1.05	1.051	mg/L				0.1	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	20		20.16	mg/L	100.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	99.96112		100.6	mg/L	100.6	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	99.96112	3.5	104	mg/L	100.5	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	99.96112	3.5	104.3	mg/L	100.8	85	115	0.29	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	20		19.82	mg/L	99.1	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	99.96112		97.83	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	99.96112	5.8	102.2	mg/L	96.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	99.96112	5.8	100.5	mg/L	94.7	70	130	1.68	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346943													
WG346943PBW	PBW	07/03/13 10:45				U	mg/L		-15	15			
WG346943LCSW	LCSW	07/03/13 10:46	PCN42878	160		157	mg/L	98.1	80	120			
L13047-02DUP	DUP	07/03/13 11:11			5	6	mg/L				18.2	10	RA
L13048-02DUP	DUP	07/03/13 11:14			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.01	mg/L	100.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0009		1.05	mg/L	104.9	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.92	mg/L	96	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0009		1.01	mg/L	100.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0009	U	.98	mg/L	97.9	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0009	U	.97	mg/L	96.9	70	130	1.03	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05318	mg/L	106.4	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04705	mg/L	94	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	.0002	.05355	mg/L	106.6	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	.0002	.05241	mg/L	104.3	70	130	2.15	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05287	mg/L	105.7	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.05193	mg/L	103.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0001	.04929	mg/L	98.3	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0001	.04955	mg/L	98.8	70	130	0.53	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.02002		.02027	mg/L	101.2	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.00015	0.00015			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.01001		.009222	mg/L	92.1	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.01001	U	.00859	mg/L	85.8	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.01001	U	.008839	mg/L	88.3	70	130	2.86	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02002		.0202	mg/L	100.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.01001		.009514	mg/L	95	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.01001	.0001	.009428	mg/L	93.2	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.01001	.0001	.009457	mg/L	93.5	70	130	0.31	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		100.7	mg/L	100.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	100.0495		100.9	mg/L	100.9	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	100.0495	26.9	127.1	mg/L	100.2	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	100.0495	26.9	126.9	mg/L	100	85	115	0.16	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.87	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	100.0495		97.32	mg/L	97.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	100.0495	110	203	mg/L	93	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	100.0495	110	199.3	mg/L	89.3	70	130	1.84	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.054	mg/L	102.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.511	mg/L	102.2	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	.1	.602	mg/L	100.4	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	.1	.603	mg/L	100.6	85	115	0.17	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.977	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.484	mg/L	96.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.48	mg/L	96	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.472	mg/L	94.4	70	130	1.68	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05496	mg/L	109.9	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.05159	mg/L	103.1	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	U	.05241	mg/L	104.7	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	U	.05248	mg/L	104.9	70	130	0.13	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05394	mg/L	107.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04953	mg/L	99	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	U	.0501	mg/L	100.1	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	U	.04977	mg/L	99.4	70	130	0.66	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05015		.05027	mg/L	100.2	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05005		.04547	mg/L	90.8	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05005	U	.04383	mg/L	87.6	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05005	U	.04307	mg/L	86.1	70	130	1.75	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05015		.05125	mg/L	102.2	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				.0002	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04633	mg/L	92.6	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	U	.04562	mg/L	91.1	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	U	.04587	mg/L	91.6	70	130	0.55	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0275	mg/L	101.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.015	0.015			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.033	mg/L	103.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.037	mg/L	103.7	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.039	mg/L	103.9	85	115	0.19	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9495	mg/L	97.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.015	0.015			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.011	0.011			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.997	mg/L	99.7	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.9898	mg/L	99	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.9777	mg/L	97.8	70	130	1.23	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.05257	mg/L	105.1	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0003	0.0003			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.05		.04952	mg/L	99	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.05	.0004	.05079	mg/L	100.8	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.05	.0004	.05126	mg/L	101.7	70	130	0.92	20	

SPF Water Engineering

ACZ Project ID: ***L13047***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05317	mg/L	106.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05		.04927	mg/L	98.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05	U	.05125	mg/L	102.5	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05	U	.05059	mg/L	101.2	70	130	1.3	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347429													
WG347429ICV	ICV	07/12/13 0:01	MS130416-2	.05		.04797	mg/L	95.9	90	110			
WG347429ICB	ICB	07/12/13 0:04				U	mg/L		-0.0006	0.0006			
WG347429LFB	LFB	07/12/13 0:08	MS130614-1	.0501		.04538	mg/L	90.6	85	115			
L13030-03AS	AS	07/12/13 0:25	MS130614-1	.0501	U	.04745	mg/L	94.7	70	130			
L13030-03ASD	ASD	07/12/13 0:28	MS130614-1	.0501	U	.04805	mg/L	95.9	70	130	1.26	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04917	mg/L	98.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0006	0.0006			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00044	0.00044			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04825	mg/L	96.3	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	.0004	.04925	mg/L	97.5	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	.0004	.04868	mg/L	96.4	70	130	1.16	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.958	mg/L	97.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.513	mg/L	102.6	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	U	.51	mg/L	102	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	U	.515	mg/L	103	85	115	0.98	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.946	mg/L	97.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.504	mg/L	100.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.496	mg/L	99.2	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.486	mg/L	97.2	70	130	2.04	20	

SPF Water Engineering ACZ Project ID: ***L13047***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13047-01	WG346995	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347370	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346943	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L13047***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13047-02	WG347159	Mercury, dissolved	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG346995	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347426	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346943	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L13047
Date Received: 07/02/2013 10:17
Received By: gac
Date Printed: 7/3/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA17912	22.5	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13047

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2013-GW							
Leslie Gulch	6/27/13 9:00		7	X							
Dry Creek Arm	6/27/13 14:20		7	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/28/13 9:00		7/2/13 10:10

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13047 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13048

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 02, 2013. This project has been assigned to ACZ's project number, L13048. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13048. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 18, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 19, 2013

Project ID: Calico 2nd Q sampling
ACZ Project ID: L13048

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on July 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13048. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report:

1. For L13048-01, -04, the dissolved and total cobalt values were verified by re-digestion and re-analysis with no significant change.

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13048-01***
Date Sampled: *06/27/13 15:45*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/11/13 11:58	mla
Cyanide, WAD	SM4500-CN I- distillation								07/10/13 21:46	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 15:57	mla
Total Hot Plate Digestion	M200.2 ICP								07/16/13 17:29	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/13 11:28	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13048-01***
Date Sampled: *06/27/13 15:45*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:27	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/11/13 14:35	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	07/12/13 3:31	msh
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/12/13 7:27	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0898			mg/L	0.0002	0.001	07/12/13 3:31	msh
Arsenic, total	M200.8 ICP-MS	1	0.0846			mg/L	0.0002	0.001	07/12/13 7:27	pmc
Barium, dissolved	M200.7 ICP	1	0.045			mg/L	0.003	0.02	07/09/13 0:27	jjc
Barium, total	M200.7 ICP	1	0.046			mg/L	0.003	0.02	07/11/13 14:35	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:31	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:27	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:27	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/11/13 14:35	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/09/13 0:27	jjc
Boron, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	07/11/13 14:35	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:31	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:27	pmc
Calcium, dissolved	M200.7 ICP	1	37.2			mg/L	0.2	1	07/09/13 0:27	jjc
Calcium, total	M200.7 ICP	1	37.2			mg/L	0.2	1	07/11/13 14:35	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 3:31	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 7:27	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00051			mg/L	0.00005	0.0003	07/12/13 3:31	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:27	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/12/13 3:31	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/12/13 7:27	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:27	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/11/13 14:35	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	07/16/13 17:00	aeb
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/17/13 16:58	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:31	msh
Lead, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:27	pmc
Lithium, dissolved	M200.7 ICP	1	0.11			mg/L	0.02	0.1	07/09/13 0:27	jjc
Lithium, total	M200.7 ICP	1	0.11			mg/L	0.02	0.1	07/11/13 14:35	aeb
Magnesium, dissolved	M200.7 ICP	1	6.2			mg/L	0.2	1	07/09/13 0:27	jjc
Magnesium, total	M200.7 ICP	1	6.1			mg/L	0.2	1	07/11/13 14:35	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 3:31	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 7:27	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/09/13 17:03	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/11/13 14:30	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0210			mg/L	0.0005	0.003	07/12/13 3:31	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0212			mg/L	0.0005	0.003	07/12/13 7:27	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 3:31	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 7:27	pmc
Potassium, dissolved	M200.7 ICP	1	6.0			mg/L	0.3	2	07/09/13 0:27	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13048-01***
Date Sampled: *06/27/13 15:45*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.3	2	07/11/13 14:35	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:27	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/11/13 14:35	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	07/12/13 3:31	msh
Selenium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0003	07/12/13 7:27	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 3:31	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:27	pmc
Sodium, dissolved	M200.7 ICP	1	70.8			mg/L	0.3	2	07/09/13 0:27	jjc
Sodium, total	M200.7 ICP	1	70.7			mg/L	0.3	2	07/11/13 14:35	aeb
Strontium, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/09/13 0:27	jjc
Strontium, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/11/13 14:35	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 3:31	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:27	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	07/12/13 3:31	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:27	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:27	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/11/13 14:35	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0054			mg/L	0.0001	0.0005	07/12/13 3:31	msh
Uranium, total	M200.8 ICP-MS	1	0.0055			mg/L	0.0001	0.0005	07/12/13 7:27	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0215		*	mg/L	0.0002	0.001	07/12/13 3:31	msh
Vanadium, total	M200.8 ICP-MS	1	0.0217			mg/L	0.0002	0.001	07/12/13 7:27	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:27	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/11/13 14:35	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	137		*	mg/L	2	20	07/04/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Total Alkalinity		1	137		*	mg/L	2	20	07/04/13 0:00	abm
Conductivity @25C	SM2510B	1	546		*	umhos/cm	1	10	07/04/13 1:10	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:58	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:16	mpb
Hardness as CaCO3	SM2340B - Calculation		118			mg/L	1	7	07/19/13 9:25	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/10/13 12:37	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	07/04/13 0:00	abm
pH measured at		1	23.0		*	C	0.1	0.1	07/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	07/09/13 17:35	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 11:12	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY DUPLICATE

ACZ Sample ID: ***L13048-02***
Date Sampled: *06/27/13 15:55*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/11/13 12:13	mla
Cyanide, WAD	SM4500-CN I- distillation								07/10/13 22:36	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 16:03	mla
Total Hot Plate Digestion	M200.2 ICP								07/09/13 10:47	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/13 11:40	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY DUPLICATE

ACZ Sample ID: ***L13048-02***
Date Sampled: *06/27/13 15:55*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:31	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 23:57	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/12/13 23:34	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/12/13 7:30	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0889			mg/L	0.0002	0.001	07/12/13 23:34	msh
Arsenic, total	M200.8 ICP-MS	1	0.0821			mg/L	0.0002	0.001	07/12/13 7:30	pmc
Barium, dissolved	M200.7 ICP	1	0.046			mg/L	0.003	0.02	07/09/13 0:31	jjc
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	07/09/13 23:57	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:34	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:30	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:31	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 23:57	aeb
Boron, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	07/09/13 0:31	jjc
Boron, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	07/11/13 14:38	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:34	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:30	pmc
Calcium, dissolved	M200.7 ICP	1	37.2			mg/L	0.2	1	07/09/13 0:31	jjc
Calcium, total	M200.7 ICP	1	36.8			mg/L	0.2	1	07/09/13 23:57	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 23:34	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 7:30	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00022	B		mg/L	0.00005	0.0003	07/12/13 23:34	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:30	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/12/13 23:34	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/12/13 7:30	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:31	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:57	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:31	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 23:57	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:34	msh
Lead, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:30	pmc
Lithium, dissolved	M200.7 ICP	1	0.11			mg/L	0.02	0.1	07/09/13 0:31	jjc
Lithium, total	M200.7 ICP	1	0.10			mg/L	0.02	0.1	07/09/13 23:57	aeb
Magnesium, dissolved	M200.7 ICP	1	6.2			mg/L	0.2	1	07/09/13 0:31	jjc
Magnesium, total	M200.7 ICP	1	6.1			mg/L	0.2	1	07/09/13 23:57	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 23:34	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 7:30	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/09/13 17:10	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/11/13 14:36	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0214			mg/L	0.0005	0.003	07/12/13 23:34	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0210			mg/L	0.0005	0.003	07/12/13 7:30	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 23:34	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 7:30	pmc
Potassium, dissolved	M200.7 ICP	1	6.0			mg/L	0.3	2	07/09/13 0:31	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: WHISKEY DUPLICATE

ACZ Sample ID: ***L13048-02***
Date Sampled: *06/27/13 15:55*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.3	2	07/09/13 23:57	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:31	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 23:57	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	07/12/13 23:34	msh
Selenium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0003	07/12/13 7:30	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:34	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:30	pmc
Sodium, dissolved	M200.7 ICP	1	70.6			mg/L	0.3	2	07/09/13 0:31	jjc
Sodium, total	M200.7 ICP	1	69.6			mg/L	0.3	2	07/09/13 23:57	aeb
Strontium, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/09/13 0:31	jjc
Strontium, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/09/13 23:57	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:34	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:30	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 23:34	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:30	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:31	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 23:57	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0055			mg/L	0.0001	0.0005	07/12/13 23:34	msh
Uranium, total	M200.8 ICP-MS	1	0.0054			mg/L	0.0001	0.0005	07/12/13 7:30	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0206			mg/L	0.0002	0.001	07/12/13 23:34	msh
Vanadium, total	M200.8 ICP-MS	1	0.0215			mg/L	0.0002	0.001	07/12/13 7:30	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:31	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 23:57	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	136		*	mg/L	2	20	07/04/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Total Alkalinity		1	136		*	mg/L	2	20	07/04/13 0:00	abm
Conductivity @25C	SM2510B	1	542		*	umhos/cm	1	10	07/04/13 1:19	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:59	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:17	mpb
Hardness as CaCO3	SM2340B - Calculation		118			mg/L	1	7	07/19/13 9:25	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/10/13 12:39	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	07/04/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/09/13 17:36	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 11:13	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING UPPER

ACZ Sample ID: ***L13048-03***
Date Sampled: *06/27/13 17:15*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/11/13 12:20	mla
Cyanide, WAD	SM4500-CN I- distillation								07/10/13 23:27	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/13 16:10	mla
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/13 11:52	las
Total Hot Plate Digestion	M200.2 ICP								07/09/13 10:59	aeb

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING UPPER

ACZ Sample ID: ***L13048-03***
Date Sampled: *06/27/13 17:15*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:34	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/10/13 0:00	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 23:38	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 7:33	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0283			mg/L	0.0002	0.001	07/12/13 23:38	msh
Arsenic, total	M200.8 ICP-MS	1	0.0272			mg/L	0.0002	0.001	07/12/13 7:33	pmc
Barium, dissolved	M200.7 ICP	1	0.066			mg/L	0.003	0.02	07/09/13 0:34	jjc
Barium, total	M200.7 ICP	1	0.066			mg/L	0.003	0.02	07/10/13 0:00	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:38	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:33	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:34	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/10/13 0:00	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/09/13 0:34	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/11/13 14:41	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:38	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:33	pmc
Calcium, dissolved	M200.7 ICP	1	33.6			mg/L	0.2	1	07/09/13 0:34	jjc
Calcium, total	M200.7 ICP	1	33.0			mg/L	0.2	1	07/10/13 0:00	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 23:38	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 7:33	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	07/12/13 23:38	msh
Cobalt, total	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	07/12/13 7:33	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.003	07/12/13 23:38	msh
Copper, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	07/13/13 3:54	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:34	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/10/13 0:00	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:34	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/10/13 0:00	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:38	msh
Lead, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:33	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 0:34	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/10/13 0:00	aeb
Magnesium, dissolved	M200.7 ICP	1	8.7			mg/L	0.2	1	07/09/13 0:34	jjc
Magnesium, total	M200.7 ICP	1	8.5			mg/L	0.2	1	07/10/13 0:00	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 23:38	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 7:33	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	07/09/13 17:16	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	07/11/13 14:43	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	07/12/13 23:38	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	07/12/13 7:33	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 23:38	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 7:33	pmc
Potassium, dissolved	M200.7 ICP	1	4.5			mg/L	0.3	2	07/09/13 0:34	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING UPPER

ACZ Sample ID: ***L13048-03***
Date Sampled: *06/27/13 17:15*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.3			mg/L	0.3	2	07/10/13 0:00	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:34	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/10/13 0:00	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0013			mg/L	0.0001	0.0003	07/12/13 23:38	msh
Selenium, total	M200.8 ICP-MS	1	0.0012			mg/L	0.0001	0.0003	07/12/13 7:33	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:38	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:33	pmc
Sodium, dissolved	M200.7 ICP	1	39.1			mg/L	0.3	2	07/09/13 0:34	jjc
Sodium, total	M200.7 ICP	1	38.2			mg/L	0.3	2	07/10/13 0:00	aeb
Strontium, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	07/09/13 0:34	jjc
Strontium, total	M200.7 ICP	1	0.23			mg/L	0.01	0.05	07/10/13 0:00	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:38	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:33	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 23:38	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:33	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:34	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/10/13 0:00	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	07/12/13 23:38	msh
Uranium, total	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	07/12/13 7:33	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0270			mg/L	0.0002	0.001	07/12/13 23:38	msh
Vanadium, total	M200.8 ICP-MS	1	0.0283			mg/L	0.0002	0.001	07/12/13 7:33	pmc
Zinc, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/09/13 0:34	jjc
Zinc, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/10/13 0:00	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	147		*	mg/L	2	20	07/04/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/04/13 0:00	abm
Total Alkalinity		1	147		*	mg/L	2	20	07/04/13 0:00	abm
Conductivity @25C	SM2510B	1	400		*	umhos/cm	1	10	07/04/13 1:28	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 15:00	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:20	mpb
Hardness as CaCO3	SM2340B - Calculation		120			mg/L	1	7	07/19/13 9:25	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/10/13 12:40	bsu
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	07/04/13 0:00	abm
pH measured at		1	22.0		*	C	0.1	0.1	07/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/09/13 17:37	mpb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 14:11	mss3

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING LOWER

ACZ Sample ID: ***L13048-04***
Date Sampled: *06/27/13 18:30*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/11/13 12:27	mla
Cyanide, WAD	SM4500-CN I- distillation								07/11/13 0:17	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/09/13 13:07	mla
Total Hot Plate Digestion	M200.2 ICP								07/09/13 11:10	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/13 12:04	las

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING LOWER

ACZ Sample ID: ***L13048-04***
Date Sampled: *06/27/13 18:30*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/09/13 0:43	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/10/13 0:03	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	07/12/13 23:48	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/12/13 7:36	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0234			mg/L	0.0002	0.001	07/12/13 23:48	msh
Arsenic, total	M200.8 ICP-MS	1	0.0227			mg/L	0.0002	0.001	07/12/13 7:36	pmc
Barium, dissolved	M200.7 ICP	1	0.085			mg/L	0.003	0.02	07/09/13 0:43	jjc
Barium, total	M200.7 ICP	1	0.084			mg/L	0.003	0.02	07/10/13 0:03	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:48	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:36	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/13 0:43	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/10/13 0:03	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/09/13 0:43	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	07/11/13 14:44	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:48	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:36	pmc
Calcium, dissolved	M200.7 ICP	1	23.7			mg/L	0.2	1	07/09/13 0:43	jjc
Calcium, total	M200.7 ICP	1	23.1			mg/L	0.2	1	07/10/13 0:03	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 23:48	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/12/13 7:36	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00082			mg/L	0.00005	0.0003	07/12/13 23:48	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:36	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/12/13 23:48	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/12/13 7:36	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:43	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/10/13 0:03	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/09/13 0:43	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/10/13 0:03	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:48	msh
Lead, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:36	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	07/09/13 0:43	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	07/10/13 0:03	aeb
Magnesium, dissolved	M200.7 ICP	1	5.3			mg/L	0.2	1	07/09/13 0:43	jjc
Magnesium, total	M200.7 ICP	1	5.0			mg/L	0.2	1	07/10/13 0:03	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.003	07/12/13 23:48	msh
Manganese, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/12/13 7:36	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	2	1.1			ng/L	0.4	1	07/09/13 17:23	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/11/13 14:50	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0005	0.003	07/12/13 23:48	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	07/12/13 7:36	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 23:48	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/12/13 7:36	pmc
Potassium, dissolved	M200.7 ICP	1	2.8			mg/L	0.3	2	07/09/13 0:43	jjc

SPF Water Engineering
Project ID: Calico 2nd Q sampling
Sample ID: SOURDOUGH SPRING LOWER

ACZ Sample ID: ***L13048-04***
Date Sampled: *06/27/13 18:30*
Date Received: *07/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	2.6			mg/L	0.3	2	07/10/13 0:03	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/13 0:43	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/10/13 0:03	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	07/12/13 23:48	msh
Selenium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	07/12/13 7:36	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 23:48	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/12/13 7:36	pmc
Sodium, dissolved	M200.7 ICP	1	35.2			mg/L	0.3	2	07/09/13 0:43	jjc
Sodium, total	M200.7 ICP	1	34.1			mg/L	0.3	2	07/10/13 0:03	aeb
Strontium, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	07/09/13 0:43	jjc
Strontium, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	07/10/13 0:03	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 23:48	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/12/13 7:36	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/12/13 23:48	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/12/13 7:36	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/09/13 0:43	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/10/13 0:03	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0047			mg/L	0.0001	0.0005	07/12/13 23:48	msh
Uranium, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	07/12/13 7:36	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0154			mg/L	0.0002	0.001	07/12/13 23:48	msh
Vanadium, total	M200.8 ICP-MS	1	0.0168			mg/L	0.0002	0.001	07/12/13 7:36	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/09/13 0:43	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/10/13 0:03	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	116		*	mg/L	2	20	07/05/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/05/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/05/13 0:00	khw
Total Alkalinity		1	116		*	mg/L	2	20	07/05/13 0:00	khw
Conductivity @25C	SM2510B	1	310		*	umhos/cm	1	10	07/05/13 11:59	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 15:01	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/11/13 14:21	mpb
Hardness as CaCO3	SM2340B - Calculation		81			mg/L	1	7	07/19/13 9:26	calc
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	07/10/13 12:42	bsu
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	07/05/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	07/05/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/10/13 0:06	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/03/13 14:13	mss3

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13048***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995PBW1	PBW	07/03/13 17:11				U	mg/L		-20	20			
WG346995LCSW2	LCSW	07/03/13 17:24	WC130625-	820.0001		777	mg/L	94.8	90	110			
WG346995LCSW5	LCSW	07/03/13 20:41	WC130625-	820.0001		788.2	mg/L	96.1	90	110			
WG346995PBW2	PBW	07/03/13 20:49				2.7	mg/L		-20	20			
WG346995LCSW8	LCSW	07/03/13 23:48	WC130625-	820.0001		776.4	mg/L	94.7	90	110			
WG346995PBW3	PBW	07/03/13 23:56				2.4	mg/L		-20	20			
L13050-01DUP	DUP	07/04/13 1:36			U	U	mg/L				0	20	RA
WG346995LCSW11	LCSW	07/04/13 3:07	WC130625-	820.0001		776.2	mg/L	94.7	90	110			
WG346995PBW4	PBW	07/04/13 3:15				2.6	mg/L		-20	20			
WG346995LCSW14	LCSW	07/04/13 6:16	WC130625-	820.0001		783	mg/L	95.5	90	110			
WG347030													
WG347030PBW1	PBW	07/05/13 11:33				2.6	mg/L		-20	20			
WG347030LCSW2	LCSW	07/05/13 11:47	WC130625-	820.0001		778.1	mg/L	94.9	90	110			
L13053-01DUP	DUP	07/05/13 12:51			10	13.3	mg/L				28.3	20	RA
WG347030LCSW5	LCSW	07/05/13 14:55	WC130625-	820.0001		773.2	mg/L	94.3	90	110			
WG347030PBW2	PBW	07/05/13 15:03				3.1	mg/L		-20	20			
WG347030LCSW8	LCSW	07/05/13 15:59	WC130625-	820.0001		793.2	mg/L	96.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.037	mg/L	101.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.09	0.09			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0011		1.044	mg/L	104.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0011	.08	1.138	mg/L	105.7	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0011	.08	1.143	mg/L	106.2	85	115	0.44	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.986	mg/L	99.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.09	0.09			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.066	0.066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0011		1.007	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0011	U	.995	mg/L	99.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0011	U	.983	mg/L	98.2	70	130	1.21	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.998	mg/L	99.9	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.09	0.09			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.066	0.066			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1.0011		.995	mg/L	99.4	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1.0011	U	.995	mg/L	99.4	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1.0011	U	.984	mg/L	98.3	70	130	1.11	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02		.02184	mg/L	109.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0012	0.0012			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.01		.0099	mg/L	99	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.01	U	.00872	mg/L	87.2	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.01	U	.00886	mg/L	88.6	70	130	1.59	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.02		.02143	mg/L	107.2	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0012	0.0012			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.01		.01019	mg/L	101.9	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.01	U	.00922	mg/L	92.2	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.01	U	.00976	mg/L	97.6	70	130	5.69	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02		.02062	mg/L	103.1	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0012	0.0012			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00088	0.00088			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.01		.01038	mg/L	103.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.01	U	.01044	mg/L	104.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.01	U	.01043	mg/L	104.3	70	130	0.1	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05457	mg/L	109.1	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0006	0.0006			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05269	mg/L	105.3	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0059	.06096	mg/L	110	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0059	.06136	mg/L	110.8	70	130	0.65	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04985	mg/L	99.7	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0006	0.0006			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04984	mg/L	99.6	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	.0283	.08147	mg/L	106.2	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	.0283	.08186	mg/L	107	70	130	0.48	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05152	mg/L	103	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0006	0.0006			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00044	0.00044			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.05103	mg/L	102	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0004	.05044	mg/L	100	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0004	.04981	mg/L	98.7	70	130	1.26	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0295	mg/L	101.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.009	0.009			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.5063	mg/L	101.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	.011	.5154	mg/L	100.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	.011	.5196	mg/L	101.7	85	115	0.81	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9378	mg/L	96.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.009	0.009			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.0066	0.0066			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.4766	mg/L	95.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	.005	.467	mg/L	92.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	.005	.4601	mg/L	91	70	130	1.49	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.9615	mg/L	98.1	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.009	0.009			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.0066	0.0066			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5		.4663	mg/L	93.3	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5	U	.4692	mg/L	93.8	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5	U	.4673	mg/L	93.5	70	130	0.41	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04782	mg/L	95.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.04741	mg/L	94.6	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	U	.04977	mg/L	99.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	U	.04944	mg/L	98.7	70	130	0.67	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.0474	mg/L	94.8	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.00015	0.00015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.0501		.04793	mg/L	95.7	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.0501	U	.04981	mg/L	99.4	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.0501	U	.05008	mg/L	100	70	130	0.54	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04696	mg/L	93.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04685	mg/L	93.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	U	.0468	mg/L	93.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	U	.0471	mg/L	94	70	130	0.64	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.995	mg/L	99.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.12	0.12			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.007	mg/L	100.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	.988	mg/L	98.8	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.001	mg/L	100.1	85	115	1.31	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.971	mg/L	98.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.12	0.12			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.088	0.088			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.016	mg/L	101.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.011	mg/L	101.1	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.977	mg/L	97.7	70	130	3.42	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.998	mg/L	99.9	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.12	0.12			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.088	0.088			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1		1.014	mg/L	101.4	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1	U	1.014	mg/L	101.4	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1	U	1.011	mg/L	101.1	70	130	0.3	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.047	mg/L	102.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5005		.514	mg/L	102.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5005	.08	.592	mg/L	102.3	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5005	.08	.601	mg/L	104.1	85	115	1.51	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		2.016	mg/L	100.8	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5005		.482	mg/L	96.3	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5005	.12	.604	mg/L	96.7	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5005	.12	.607	mg/L	97.3	70	130	0.5	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.0506	mg/L	101.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.04923	mg/L	98.3	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	U	.04976	mg/L	99.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	U	.04917	mg/L	98.1	70	130	1.19	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04963	mg/L	99.3	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.0501		.04919	mg/L	98.2	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.0501	U	.04899	mg/L	97.8	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.0501	U	.0498	mg/L	99.4	70	130	1.64	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05094	mg/L	101.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04936	mg/L	98.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	.0009	.04971	mg/L	97.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	.0009	.04899	mg/L	96	70	130	1.46	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		99.86	mg/L	99.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	68.0028		71.18	mg/L	104.7	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	68.0028	20	89.99	mg/L	102.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	68.0028	20	90.37	mg/L	103.5	85	115	0.42	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.28	mg/L	98.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	68.0028		68.43	mg/L	100.6	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	68.0028	1.1	69.08	mg/L	100	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	68.0028	1.1	67.97	mg/L	98.3	70	130	1.62	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	100		98.45	mg/L	98.5	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	68.0028		68.07	mg/L	100.1	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	68.0028	1.1	69.05	mg/L	99.9	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	68.0028	1.1	68.24	mg/L	98.7	70	130	1.18	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05152	mg/L	103	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05088	mg/L	101.7	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04827	mg/L	96.4	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04885	mg/L	97.6	70	130	1.19	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04748	mg/L	95	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0015	0.0015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.0496	mg/L	99.1	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.04666	mg/L	93.2	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.04684	mg/L	93.6	70	130	0.39	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04882	mg/L	97.6	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.0473	mg/L	94.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0008	.04803	mg/L	94.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0008	.04781	mg/L	93.9	70	130	0.46	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04724	mg/L	94.5	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04697	mg/L	93.8	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.00046	.04597	mg/L	90.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.00046	.04537	mg/L	89.7	70	130	1.31	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04699	mg/L	94	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.00015	0.00015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04841	mg/L	96.7	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	.00027	.04639	mg/L	92.1	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	.00027	.04646	mg/L	92.3	70	130	0.15	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05058	mg/L	101.2	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04897	mg/L	97.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.00067	.04951	mg/L	97.6	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.00067	.04885	mg/L	96.3	70	130	1.34	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995LCSW1	LCSW	07/03/13 17:12	PCN42820	1408.8		1448.7	umhos/cm	102.8	90	110			
WG346995LCSW4	LCSW	07/03/13 20:29	PCN42820	1408.8		1420.1	umhos/cm	100.8	90	110			
WG346995LCSW7	LCSW	07/03/13 23:37	PCN42820	1408.8		1397.7	umhos/cm	99.2	90	110			
L13050-01DUP	DUP	07/04/13 1:36			1440	1437	umhos/cm				0.2	20	
WG346995LCSW10	LCSW	07/04/13 2:56	PCN42820	1408.8		1380.4	umhos/cm	98	90	110			
WG346995LCSW13	LCSW	07/04/13 6:04	PCN42820	1408.8		1370.2	umhos/cm	97.3	90	110			
WG347030													
WG347030LCSW1	LCSW	07/05/13 11:35	PCN42820	1408.8		1469	umhos/cm	104.3	90	110			
L13053-01DUP	DUP	07/05/13 12:51			125	123.6	umhos/cm				1.1	20	
WG347030LCSW4	LCSW	07/05/13 14:44	PCN42820	1408.8		1428.3	umhos/cm	101.4	90	110			
WG347030LCSW7	LCSW	07/05/13 15:47	PCN42820	1408.8		1415	umhos/cm	100.4	90	110			

SPF Water Engineering

ACZ Project ID: ***L13048***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05134	mg/L	102.7	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04955	mg/L	99	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0007	.0471	mg/L	92.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0007	.04755	mg/L	93.6	70	130	0.95	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04834	mg/L	96.7	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0015	0.0015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04944	mg/L	98.8	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	.0013	.04593	mg/L	89.2	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	.0013	.04602	mg/L	89.4	70	130	0.2	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.0489	mg/L	97.8	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				.00433	mg/L		-0.0011	0.0011			BF
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04698	mg/L	93.9	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0011	.04771	mg/L	93.1	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0011	.04755	mg/L	92.8	70	130	0.34	20	
WG347525													
WG347525ICV	ICV	07/13/13 3:38	MS130416-2	.05		.05016	mg/L	100.3	90	110			
WG347525ICB	ICB	07/13/13 3:41				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/13/13 3:43				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/13/13 3:46	MS130614-1	.05005		.05099	mg/L	101.9	85	115			
L13067-01LFM	LFM	07/13/13 4:00	MS130614-1	.05005	.0014	.05077	mg/L	98.6	70	130			
L13067-01LFMD	LFMD	07/13/13 4:02	MS130614-1	.05005	.0014	.05078	mg/L	98.7	70	130	0.02	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347421													
WG347421ICV	ICV	07/11/13 14:08	WI130708-6	.3		.2842	mg/L	94.7	90	110			
WG347421ICB	ICB	07/11/13 14:09				U	mg/L		-0.003	0.003			
WG347426													
WG347404LRB	LRB	07/11/13 14:54				U	mg/L		-0.003	0.003			
WG347404LFB	LFB	07/11/13 14:55	WI130708-2	.2		.1979	mg/L	99	90	110			
L13047-02DUP	DUP	07/11/13 14:57			U	U	mg/L				0	20	RA
L13048-01LFM	LFM	07/11/13 14:59	WI130708-2	.2	U	.195	mg/L	97.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L13048***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347421													
WG347421ICV	ICV	07/11/13 14:08	WI130708-6	.3		.2842	mg/L	94.7	90	110			
WG347421ICB	ICB	07/11/13 14:09				U	mg/L		-0.003	0.003			
WG347335LRB	LRB	07/11/13 14:10				U	mg/L		-0.003	0.003			
WG347335LFB	LFB	07/11/13 14:11	WI130708-4	.2		.1922	mg/L	96.1	90	110			
L13001-06DUP	DUP	07/11/13 14:12			U	U	mg/L				0	20	RA
L13001-07LFM	LFM	07/11/13 14:14	WI130708-4	.2	U	.1727	mg/L	86.4	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.07	mg/L	103.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.04	mg/L	104	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.04	mg/L	104	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.05	mg/L	105	85	115	0.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.99	mg/L	99.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		1.03	mg/L	103	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	1.03	mg/L	103	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	1.01	mg/L	101	70	130	1.96	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		2.03	mg/L	101.5	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1		1.01	mg/L	101	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1	U	1.01	mg/L	101	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1	U	1.02	mg/L	102	70	130	0.99	20	

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ACZ Project ID: ***L13048***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.003	mg/L	100.2	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0014		1.021	mg/L	102	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0014	.07	1.093	mg/L	102.2	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0014	.07	1.1	mg/L	102.9	85	115	0.64	20	
WG347659													
WG347659ICV	ICV	07/16/13 16:41	II130711-2	2		2.019	mg/L	101	95	105			
WG347659ICB	ICB	07/16/13 16:45				U	mg/L		-0.06	0.06			
WG347659LFB	LFB	07/16/13 16:57	II130708-3	1.0014		1.058	mg/L	105.7	85	115			
L13202-01AS	AS	07/16/13 17:10	II130708-3	1.0014	.18	1.225	mg/L	104.4	85	115			
L13202-01ASD	ASD	07/16/13 17:13	II130708-3	1.0014	.18	1.221	mg/L	104	85	115	0.33	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.963	mg/L	98.2	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0014		.979	mg/L	97.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0014	U	.957	mg/L	95.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0014	U	.948	mg/L	94.7	70	130	0.94	20	
WG347728													
WG347728ICV	ICV	07/17/13 16:32	II130711-1	2		2.023	mg/L	101.2	95	105			
WG347728ICB	ICB	07/17/13 16:36				U	mg/L		-0.06	0.06			
WG347669LRB	LRB	07/17/13 16:48				.102	mg/L		-0.044	0.044			BF
WG347669LFB	LFB	07/17/13 16:51	II130708-3	1.0014		1.054	mg/L	105.3	85	115			
L13179-01LFM	LFM	07/17/13 17:13	II130708-3	1.0014	.92	1.908	mg/L	98.7	70	130			
L13179-01LFMD	LFMD	07/17/13 17:16	II130708-3	1.0014	.92	1.901	mg/L	98	70	130	0.37	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05172	mg/L	103.4	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04923	mg/L	98.4	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04888	mg/L	97.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04821	mg/L	96.3	70	130	1.38	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04958	mg/L	99.2	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04872	mg/L	97.3	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.04794	mg/L	95.8	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.0481	mg/L	96.1	70	130	0.33	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05191	mg/L	103.8	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				.00041	mg/L		-0.00022	0.00022			BF
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04756	mg/L	95	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0024	.05088	mg/L	96.9	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0024	.05025	mg/L	95.6	70	130	1.25	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.04	mg/L	102	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.06	0.06			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.021	mg/L	102.1	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.025	mg/L	102.5	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.028	mg/L	102.8	85	115	0.29	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.952	mg/L	97.6	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.995	mg/L	99.5	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.977	mg/L	97.7	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.966	mg/L	96.6	70	130	1.13	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.976	mg/L	98.8	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.06	0.06			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.044	0.044			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1		.979	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1	U	.984	mg/L	98.4	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1	U	.98	mg/L	98	70	130	0.41	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		98.9	mg/L	98.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.6	0.6			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	49.99752		50.08	mg/L	100.2	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	49.99752	5.3	55.22	mg/L	99.8	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	49.99752	5.3	55.48	mg/L	100.4	85	115	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		97.76	mg/L	97.8	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	49.99752		48.97	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	49.99752	U	48.32	mg/L	96.6	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	49.99752	U	47.34	mg/L	94.7	70	130	2.05	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	100		99.1	mg/L	99.1	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.6	0.6			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.44	0.44			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	49.99752		48.59	mg/L	97.2	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	49.99752	U	48.68	mg/L	97.4	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	49.99752	U	48.07	mg/L	96.1	70	130	1.26	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.04731	mg/L	94.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04638	mg/L	92.7	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.001	.04651	mg/L	90.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.001	.04585	mg/L	89.6	70	130	1.43	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04745	mg/L	94.9	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0015	0.0015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04887	mg/L	97.6	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.04608	mg/L	92.1	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.04633	mg/L	92.6	70	130	0.54	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.0507	mg/L	101.4	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04878	mg/L	97.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.1275	.1749	mg/L	94.7	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.1275	.1728	mg/L	90.5	70	130	1.21	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347159													
WG347159ICV	ICV	07/09/13 13:14	HG130517-4	10		10.58	ng/L	105.8	79	121			
WG347159ICB	ICB	07/09/13 13:21				U	ng/L		-0.5	0.5			
WG347159PQV	PQV	07/09/13 13:27	HG130517-6	.5		.43	ng/L	86	70	130			
WG347159LFB	LFB	07/09/13 13:34	HG130517-5	2		2.05	ng/L	102.5	71	125			
WG347159CCV1	CCV	07/09/13 15:56	HG130517-4	10		8.58	ng/L	85.8	76.5	123.4			
WG347159CCB1	CCB	07/09/13 16:03				U	ng/L		-0.5	0.5			
WG347159CCV2	CCV	07/09/13 16:50	HG130517-4	10		9.06	ng/L	90.6	76.5	123.4			
WG347159CCB2	CCB	07/09/13 16:56				U	ng/L		-0.5	0.5			
L13048-04MS	MS	07/09/13 17:30	HG2XPREP	8	1.1	4.23	ng/L	78.3	71	125			
L13048-04MSD	MSD	07/09/13 17:36	HG2XPREP	8	1.1	4.66	ng/L	89	71	125	9.67	24	
WG347159CCV3	CCV	07/09/13 17:43	HG130517-4	10		10.06	ng/L	100.6	76.5	123.4			
WG347159CCB3	CCB	07/09/13 17:50				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347365													
WG347365ICV	ICV	07/11/13 12:36	HG130517-4	10		10.44	ng/L	104.4	79	121			
WG347365ICB	ICB	07/11/13 12:42				U	ng/L		-0.5	0.5			
WG347365PQV	PQV	07/11/13 12:49	HG130517-6	.5		.54	ng/L	108	70	130			
WG347365LFB	LFB	07/11/13 12:55	HG130517-5	2		1.96	ng/L	98	71	125			
L13032-01MS	MS	07/11/13 13:30	HG2XPREP	8	1.5	5.05	ng/L	88.8	71	125			
L13032-01MSD	MSD	07/11/13 13:36	HG2XPREP	8	1.5	4.82	ng/L	83	71	125	4.66	24	
WG347365CCV1	CCV	07/11/13 14:03	HG130517-4	10		9.01	ng/L	90.1	76.5	123.4			
WG347365CCB1	CCB	07/11/13 14:10				U	ng/L		-0.5	0.5			
WG347365CCV2	CCV	07/11/13 14:56	HG130517-4	10		9.25	ng/L	92.5	76.5	123.4			
WG347365CCB2	CCB	07/11/13 15:03				U	ng/L		-0.5	0.5			
L13113-02MS	MS	07/11/13 15:23	HG5XPREP	50	3	11.3	ng/L	81.4	71	125			
L13113-02MSD	MSD	07/11/13 15:30	HG5XPREP	50	3	11.3	ng/L	81.4	71	125	0	24	
WG347365CCV3	CCV	07/11/13 15:43	HG130517-4	10		9.95	ng/L	99.5	76.5	123.4			
WG347365CCB3	CCB	07/11/13 15:50				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02006		.02012	mg/L	100.3	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0015	0.0015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05		.04835	mg/L	96.7	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05	.0035	.05147	mg/L	95.9	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05	.0035	.05116	mg/L	95.3	70	130	0.6	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.02006		.01959	mg/L	97.7	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0015	0.0015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05		.04885	mg/L	97.7	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05	.0037	.0521	mg/L	96.8	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05	.0037	.05281	mg/L	98.2	70	130	1.35	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02006		.01971	mg/L	98.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0015	0.0015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.0011	0.0011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05		.04786	mg/L	95.7	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05	U	.04819	mg/L	96.4	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05	U	.04781	mg/L	95.6	70	130	0.79	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05279	mg/L	105.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0018	0.0018			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05114	mg/L	102.2	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0006	.04799	mg/L	94.7	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0006	.04864	mg/L	96	70	130	1.35	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04848	mg/L	97	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0018	0.0018			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04948	mg/L	98.9	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.046	mg/L	91.9	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.04637	mg/L	92.6	70	130	0.8	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05167	mg/L	103.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0018	0.0018			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00132	0.00132			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04888	mg/L	97.7	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0048	.05277	mg/L	95.8	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0048	.05311	mg/L	96.5	70	130	0.64	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347305													
WG347305ICV	ICV	07/10/13 12:15	WI121105-5	1.003		1.002	mg/L	99.9	90	110			
WG347305ICB	ICB	07/10/13 12:18				U	mg/L		-0.15	0.15			
WG347305LFB1	LFB	07/10/13 12:19	WI121218-3	1		.989	mg/L	98.9	90	110			
L13047-02AS	AS	07/10/13 12:36	WI121218-3	1	U	.991	mg/L	99.1	90	110			
L13048-01DUP	DUP	07/10/13 12:38			U	U	mg/L				0	20	RA
WG347305LFB2	LFB	07/10/13 12:50	WI121218-3	1		.973	mg/L	97.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L13048***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346995													
WG346995LCSW3	LCSW	07/03/13 17:27	PCN40853	6		5.99	units	99.8	98	102			
WG346995LCSW6	LCSW	07/03/13 20:44	PCN40853	6		6.01	units	100.2	98	102			
WG346995LCSW9	LCSW	07/03/13 23:51	PCN40853	6		6.01	units	100.2	98	102			
L13050-01DUP	DUP	07/04/13 1:36			4	3.8	units				5.1	20	
WG346995LCSW12	LCSW	07/04/13 3:10	PCN40853	6		6.02	units	100.3	98	102			
WG346995LCSW15	LCSW	07/04/13 6:19	PCN40853	6		6.02	units	100.3	98	102			
WG347030													
WG347030LCSW3	LCSW	07/05/13 11:50	PCN40853	6		5.98	units	99.7	98	102			
L13053-01DUP	DUP	07/05/13 12:51			7.5	7.4	units				1.3	20	
WG347030LCSW6	LCSW	07/05/13 14:58	PCN40853	6		5.96	units	99.3	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347250													
WG347250ICV	ICV	07/09/13 14:53	WI130620-3	.65228		.633	mg/L	97	90	110			
WG347250ICB	ICB	07/09/13 14:54				U	mg/L		-0.03	0.03			
WG347256													
WG347133LRB	LRB	07/09/13 17:06				U	mg/L		-0.03	0.03			
WG347133LFB	LFB	07/09/13 17:07	WI130705-2	.5		.53	mg/L	106	90	110			
L13032-04LFM	LFM	07/09/13 17:24	WI130705-2	.5	.02	.527	mg/L	101.4	90	110			
L13046-16DUP	DUP	07/09/13 17:55			1.05	1.051	mg/L				0.1	20	
WG347280													
WG347280ICV	ICV	07/10/13 0:00	WI130620-3	.65228		.635	mg/L	97.4	90	110			
WG347280ICB	ICB	07/10/13 0:02				U	mg/L		-0.03	0.03			
WG347229LRB	LRB	07/10/13 0:04				.011	mg/L		-0.03	0.03			
WG347229LFB	LFB	07/10/13 0:05	WI130705-2	.5		.478	mg/L	95.6	90	110			
L13048-04LFM	LFM	07/10/13 0:07	WI130705-2	.5	.02	.488	mg/L	93.6	90	110			
L13049-01DUP	DUP	07/10/13 0:09			.03	.026	mg/L				14.3	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	20		20.16	mg/L	100.8	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	99.96112		100.6	mg/L	100.6	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	99.96112	3.5	104	mg/L	100.5	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	99.96112	3.5	104.3	mg/L	100.8	85	115	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	20		19.82	mg/L	99.1	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	99.96112		97.83	mg/L	97.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	99.96112	5.8	102.2	mg/L	96.4	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	99.96112	5.8	100.5	mg/L	94.7	70	130	1.68	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	20		19.97	mg/L	99.9	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	99.96112		96.93	mg/L	97	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	99.96112	5.8	102.3	mg/L	96.5	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	99.96112	5.8	101.3	mg/L	95.5	70	130	0.98	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346943													
WG346943PBW	PBW	07/03/13 10:45				U	mg/L		-15	15			
WG346943LCSW	LCSW	07/03/13 10:46	PCN42878	160		157	mg/L	98.1	80	120			
L13048-02DUP	DUP	07/03/13 11:14			U	U	mg/L				0	10	RA
WG346974													
WG346974PBW	PBW	07/03/13 14:00				U	mg/L		-15	15			
WG346974LCSW	LCSW	07/03/13 14:01	PCN42878	160		162	mg/L	101.3	80	120			
L13049-01DUP	DUP	07/03/13 14:15			10	10	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.01	mg/L	100.5	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.3	0.3			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1.0009		1.05	mg/L	104.9	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1.0009	U	1.05	mg/L	104.9	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.92	mg/L	96	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1.0009		1.01	mg/L	100.9	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1.0009	U	.98	mg/L	97.9	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1.0009	U	.97	mg/L	96.9	70	130	1.03	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.94	mg/L	97	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.3	0.3			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.22	0.22			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1.0009		.99	mg/L	98.9	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1.0009	U	.99	mg/L	98.9	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1.0009	U	.99	mg/L	98.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05509	mg/L	110.2	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05133	mg/L	102.6	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	.0002	.05349	mg/L	106.5	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	.0002	.05344	mg/L	106.4	70	130	0.09	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.05022	mg/L	100.4	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04923	mg/L	98.4	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	.0013	.05189	mg/L	101.1	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	.0013	.05284	mg/L	103	70	130	1.81	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05287	mg/L	105.7	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.05193	mg/L	103.8	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	.0001	.04929	mg/L	98.3	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	.0001	.04955	mg/L	98.8	70	130	0.53	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.02002		.02074	mg/L	103.6	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.00015	0.00015			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.01001		.009802	mg/L	97.9	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.01001	U	.008807	mg/L	88	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.01001	U	.008673	mg/L	86.6	70	130	1.53	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.02002		.01997	mg/L	99.8	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.00015	0.00015			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.01001		.00968	mg/L	96.7	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.01001	U	.009088	mg/L	90.8	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.01001	U	.009442	mg/L	94.3	70	130	3.82	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.02002		.0202	mg/L	100.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.00015	0.00015			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00011	0.00011			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.01001		.009514	mg/L	95	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.01001	.0001	.009428	mg/L	93.2	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.01001	.0001	.009457	mg/L	93.5	70	130	0.31	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	100		100.7	mg/L	100.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.9	0.9			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	100.0495		100.9	mg/L	100.9	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	100.0495	26.9	127.1	mg/L	100.2	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	100.0495	26.9	126.9	mg/L	100	85	115	0.16	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	100		98.87	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	100.0495		97.32	mg/L	97.3	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	100.0495	110	203	mg/L	93	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	100.0495	110	199.3	mg/L	89.3	70	130	1.84	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	100		99.37	mg/L	99.4	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.9	0.9			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.66	0.66			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	100.0495		96.24	mg/L	96.2	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	100.0495	110	203.7	mg/L	93.7	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	100.0495	110	202.5	mg/L	92.5	70	130	0.59	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.054	mg/L	102.7	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.511	mg/L	102.2	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	.1	.602	mg/L	100.4	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	.1	.603	mg/L	100.6	85	115	0.17	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.977	mg/L	98.9	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.484	mg/L	96.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.48	mg/L	96	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.472	mg/L	94.4	70	130	1.68	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.995	mg/L	99.8	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5		.477	mg/L	95.4	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5	U	.479	mg/L	95.8	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5	U	.474	mg/L	94.8	70	130	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05415	mg/L	108.3	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.05203	mg/L	104	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.05221	mg/L	104.3	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.05143	mg/L	102.8	70	130	1.51	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04949	mg/L	99	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04889	mg/L	97.7	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.04862	mg/L	97.1	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.04846	mg/L	96.8	70	130	0.33	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05394	mg/L	107.9	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04953	mg/L	99	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	U	.0501	mg/L	100.1	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	U	.04977	mg/L	99.4	70	130	0.66	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05015		.05222	mg/L	104.1	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05005		.04558	mg/L	91.1	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05005	U	.04402	mg/L	88	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05005	U	.04402	mg/L	88	70	130	0	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05015		.05061	mg/L	100.9	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05005		.04631	mg/L	92.5	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05005	U	.04427	mg/L	88.5	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05005	U	.04469	mg/L	89.3	70	130	0.94	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05015		.05125	mg/L	102.2	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				.0002	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05005		.04633	mg/L	92.6	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05005	U	.04562	mg/L	91.1	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05005	U	.04587	mg/L	91.6	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		2.0275	mg/L	101.4	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.015	0.015			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	1		1.033	mg/L	103.3	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	1	U	1.037	mg/L	103.7	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	1	U	1.039	mg/L	103.9	85	115	0.19	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.9495	mg/L	97.5	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.015	0.015			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.011	0.011			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	1		.997	mg/L	99.7	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	1	U	.9898	mg/L	99	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	1	U	.9777	mg/L	97.8	70	130	1.23	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.9678	mg/L	98.4	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.015	0.015			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.011	0.011			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	1		.9899	mg/L	99	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	1	U	.9883	mg/L	98.8	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	1	U	.9866	mg/L	98.7	70	130	0.17	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05288	mg/L	105.8	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0003	0.0003			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.05		.05079	mg/L	101.6	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.05	.0014	.0527	mg/L	102.6	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.05	.0014	.05187	mg/L	100.9	70	130	1.59	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.0516	mg/L	103.2	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0003	0.0003			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.05		.05131	mg/L	102.6	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.05	.0026	.05435	mg/L	103.5	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.05	.0026	.05462	mg/L	104	70	130	0.5	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.05317	mg/L	106.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0003	0.0003			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00022	0.00022			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.05		.04927	mg/L	98.5	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.05	U	.05125	mg/L	102.5	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.05	U	.05059	mg/L	101.2	70	130	1.3	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347432													
WG347432ICV	ICV	07/12/13 2:16	MS130416-2	.05		.05088	mg/L	101.8	90	110			
WG347432ICB	ICB	07/12/13 2:19				U	mg/L		-0.0006	0.0006			
WG347432LFB	LFB	07/12/13 2:23	MS130614-1	.0501		.05098	mg/L	101.8	85	115			
L13032-04AS	AS	07/12/13 3:24	MS130614-1	.0501	.0045	.05429	mg/L	99.4	70	130			
L13032-04ASD	ASD	07/12/13 3:27	MS130614-1	.0501	.0045	.05528	mg/L	101.4	70	130	1.81	20	
WG347512													
WG347512ICV	ICV	07/12/13 23:21	MS130416-2	.05		.04707	mg/L	94.1	90	110			
WG347512ICB	ICB	07/12/13 23:24				U	mg/L		-0.0006	0.0006			
WG347512LFB	LFB	07/12/13 23:27	MS130614-1	.0501		.04942	mg/L	98.6	85	115			
L13048-03AS	AS	07/12/13 23:41	MS130614-1	.0501	.027	.07561	mg/L	97	70	130			
L13048-03ASD	ASD	07/12/13 23:45	MS130614-1	.0501	.027	.07594	mg/L	97.7	70	130	0.44	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347453													
WG347453ICV	ICV	07/12/13 7:07	MS130416-2	.05		.04917	mg/L	98.3	90	110			
WG347453ICB	ICB	07/12/13 7:11				U	mg/L		-0.0006	0.0006			
WG347265LRB	LRB	07/12/13 7:14				U	mg/L		-0.00044	0.00044			
WG347265LFB	LFB	07/12/13 7:17	MS130614-1	.0501		.04825	mg/L	96.3	85	115			
L13067-01LFM	LFM	07/12/13 7:52	MS130614-1	.0501	.0004	.04925	mg/L	97.5	70	130			
L13067-01LFMD	LFMD	07/12/13 7:56	MS130614-1	.0501	.0004	.04868	mg/L	96.4	70	130	1.16	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347140													
WG347140ICV	ICV	07/08/13 23:10	II130510-1	2		1.958	mg/L	97.9	95	105			
WG347140ICB	ICB	07/08/13 23:16				U	mg/L		-0.03	0.03			
WG347140LFB	LFB	07/08/13 23:28	II130708-3	.5		.513	mg/L	102.6	85	115			
L13047-02AS	AS	07/09/13 0:21	II130708-3	.5	U	.51	mg/L	102	85	115			
L13047-02ASD	ASD	07/09/13 0:24	II130708-3	.5	U	.515	mg/L	103	85	115	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L13048***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG347248													
WG347248ICV	ICV	07/09/13 22:58	II130514-1	2		1.946	mg/L	97.3	95	105			
WG347248ICB	ICB	07/09/13 23:04				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/09/13 23:16				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/09/13 23:20	II130708-3	.5		.504	mg/L	100.8	85	115			
L13032-02LFM	LFM	07/09/13 23:29	II130708-3	.5	U	.496	mg/L	99.2	70	130			
L13032-02LFMD	LFMD	07/09/13 23:32	II130708-3	.5	U	.486	mg/L	97.2	70	130	2.04	20	
WG347303													
WG347303ICV	ICV	07/11/13 13:39	II130514-1	2		1.963	mg/L	98.2	95	105			
WG347303ICB	ICB	07/11/13 13:45				U	mg/L		-0.03	0.03			
WG347178LRB	LRB	07/11/13 13:58				U	mg/L		-0.022	0.022			
WG347178LFB	LFB	07/11/13 14:01	II130708-3	.5		.493	mg/L	98.6	85	115			
L13032-02LFM	LFM	07/11/13 14:10	II130708-3	.5	U	.493	mg/L	98.6	70	130			
L13032-02LFMD	LFMD	07/11/13 14:13	II130708-3	.5	U	.49	mg/L	98	70	130	0.61	20	

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13048***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13048-01	WG347453	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG347728	Iron, total	M200.7 ICP	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG347453	Lead, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG347432	Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG346995	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347426	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346943	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L13048***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13048-02	WG347453	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
		Lead, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346995	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347426	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346943	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13048***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13048-03	WG347453	Lead, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG346995	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347426	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347256	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG346974	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346995	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L13048***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13048-04	WG347453	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
		Lead, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG347030	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG347426	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347421	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347030	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG347305	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347030	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG347280	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG346974	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG347030	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Q sampling

ACZ Project ID: L13048
Date Received: 07/02/2013 10:18
Received By: gac
Date Printed: 7/3/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3554	25.7	16	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13048

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 2nd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2013-GW
Whiskey Spring	6/27/13 15:45		7	X
Whiskey Duplicate	6/27/13 15:55		7	X
Sourdough Spring Upper	6/27/13 17:15		7	X
Sourdough Spring Lower	6/27/13 18:30		7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/28/13 9:00		7.2.13 10:18

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13048 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 20, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q sampling
ACZ Project ID: L13751

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 08, 2013. This project has been assigned to ACZ's project number, L13751. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13751. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 19, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: PW-4

ACZ Sample ID: ***L13751-01***
Date Sampled: *08/06/13 11:30*
Date Received: *08/08/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	46.9		*	mg/L	0.5	2.5	08/15/13 23:13	tcd
Fluoride	M300.0 - Ion Chromatography	1	2.21		*	mg/L	0.1	0.5	08/15/13 23:13	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/20/13 13:08	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/08/13 19:23	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/08/13 19:23	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	550		*	mg/L	10	20	08/12/13 15:59	mss3
Sulfate	M300.0 - Ion Chromatography	5	152		*	mg/L	2.5	12.5	08/16/13 13:15	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L13751-02***
Date Sampled: *08/06/13 12:25*
Date Received: *08/08/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	29.0		*	mg/L	0.5	2.5	08/15/13 23:31	tcd
Fluoride	M300.0 - Ion Chromatography	1	2.30		*	mg/L	0.1	0.5	08/15/13 23:31	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/20/13 13:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/08/13 19:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/08/13 19:25	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	416		*	mg/L	10	20	08/12/13 16:01	mss3
Sulfate	M300.0 - Ion Chromatography	1	94.9		*	mg/L	0.5	2.5	08/15/13 23:31	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L13751-03***
Date Sampled: *08/06/13 14:50*
Date Received: *08/08/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.96		*	mg/L	0.5	2.5	08/15/13 23:48	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.44	B	*	mg/L	0.1	0.5	08/15/13 23:48	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.62	H		mg/L	0.02	0.1	08/20/13 13:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.62	H	*	mg/L	0.02	0.1	08/08/13 19:26	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/08/13 19:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	264		*	mg/L	10	20	08/12/13 16:03	mss3
Sulfate	M300.0 - Ion Chromatography	1	33.7		*	mg/L	0.5	2.5	08/15/13 23:48	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L13751-04***
Date Sampled: *08/06/13 15:35*
Date Received: *08/08/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	12.0		*	mg/L	0.5	2.5	08/16/13 16:10	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.45	B	*	mg/L	0.1	0.5	08/16/13 16:10	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.150	H		mg/L	0.06	0.3	08/20/13 13:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3	2.15	H	*	mg/L	0.06	0.3	08/08/13 21:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/08/13 19:28	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	308		*	mg/L	10	20	08/12/13 16:04	mss3
Sulfate	M300.0 - Ion Chromatography	1	36.7		*	mg/L	0.5	2.5	08/16/13 16:10	tcd

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59761

ACZ Sample ID: ***L13751-05***
Date Sampled: *08/06/13 16:30*
Date Received: *08/08/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	14.3		*	mg/L	0.5	2.5	08/16/13 16:45	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.54		*	mg/L	0.1	0.5	08/16/13 16:45	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.680	H		mg/L	0.02	0.1	08/20/13 13:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.68	H	*	mg/L	0.02	0.1	08/08/13 19:33	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/08/13 19:33	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	286		*	mg/L	10	20	08/12/13 16:05	mss3
Sulfate	M300.0 - Ion Chromatography	1	30.9		*	mg/L	0.5	2.5	08/16/13 16:45	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13751***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349448													
WG349448LFB1	LFB	08/15/13 11:16	WI130501-1	30		31.9	mg/L	106.3	90	110			
WG349448LFB2	LFB	08/15/13 19:43	WI130501-1	30		31.8	mg/L	106	90	110			
L13738-01AS	AS	08/15/13 20:18	WI130501-1	150	3.14	158	mg/L	103.2	90	110			
L13738-01DUP	DUP	08/15/13 20:36			3.14	3.14	mg/L				0	20	RA
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	30		31.7	mg/L	105.7	90	110			
L13594-04DUP	DUP	08/16/13 15:52			38	38	mg/L				0	20	RA
L13751-04AS	AS	08/16/13 16:27	WI130501-1	30	12	43.7	mg/L	105.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG349448													
WG349448LFB1	LFB	08/15/13 11:16	WI130501-1	1.5		1.61	mg/L	107.3	90	110			
WG349448LFB2	LFB	08/15/13 19:43	WI130501-1	1.5		1.59	mg/L	106	90	110			
L13738-01AS	AS	08/15/13 20:18	WI130501-1	7.5	U	7.92	mg/L	105.6	90	110			
L13738-01DUP	DUP	08/15/13 20:36			U	U	mg/L				0	20	RA
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	1.5		1.62	mg/L	108	90	110			
L13594-04DUP	DUP	08/16/13 15:52			U	U	mg/L				0	20	RA
L13751-04AS	AS	08/16/13 16:27	WI130501-1	1.5	.45	2.06	mg/L	107.3	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349156													
WG349156ICV	ICV	08/08/13 18:48	WI130712-3	2.416		2.389	mg/L	98.9	90	110			
WG349156ICB	ICB	08/08/13 18:49				U	mg/L		-0.06	0.06			
WG349156LFB1	LFB	08/08/13 18:53	WI130215-3	2		2.016	mg/L	100.8	90	110			
L13726-01AS	AS	08/08/13 19:12	WI130215-3	2	.25	2.278	mg/L	101.4	90	110			
L13727-01DUP	DUP	08/08/13 19:14			U	U	mg/L				0	20	RA
WG349156LFB2	LFB	08/08/13 19:27	WI130215-3	2		1.998	mg/L	99.9	90	110			
L13751-05DUP	DUP	08/08/13 19:34			1.68	1.665	mg/L				0.9	20	
L13751-04AS	AS	08/08/13 21:18	WI130215-3	6	2.15	7.775	mg/L	93.8	90	110			

SPF Water Engineering

ACZ Project ID: ***L13751***

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349156													
WG349156ICV	ICV	08/08/13 18:48	WI130712-3	.609		.579	mg/L	95.1	90	110			
WG349156ICB	ICB	08/08/13 18:49				U	mg/L		-0.03	0.03			
WG349156LFB1	LFB	08/08/13 18:53	WI130215-3	1		1.018	mg/L	101.8	90	110			
L13726-01AS	AS	08/08/13 19:12	WI130215-3	1	U	1.025	mg/L	102.5	90	110			
L13727-01DUP	DUP	08/08/13 19:14			U	U	mg/L				0	20	RA
WG349156LFB2	LFB	08/08/13 19:27	WI130215-3	1		.999	mg/L	99.9	90	110			
L13751-04AS	AS	08/08/13 19:29	WI130215-3	1	U	1.029	mg/L	102.9	90	110			
L13751-05DUP	DUP	08/08/13 19:34			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349292													
WG349292PBW	PBW	08/12/13 15:45				U	mg/L		-20	20			
WG349292LCSW	LCSW	08/12/13 15:46	PCN42845	260		268	mg/L	103.1	80	120			
L13751-01DUP	DUP	08/12/13 16:00			550	540	mg/L				1.8	10	
L13797-04DUP	DUP	08/12/13 16:14			1350	1350	mg/L				0	10	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349448													
WG349448LFB1	LFB	08/15/13 11:16	WI130501-1	30		32.1	mg/L	107	90	110			
WG349448LFB2	LFB	08/15/13 19:43	WI130501-1	30		31.5	mg/L	105	90	110			
L13738-01AS	AS	08/15/13 20:18	WI130501-1	150	164	317	mg/L	102	90	110			
L13738-01DUP	DUP	08/15/13 20:36			164	155	mg/L				5.6	20	
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	30		32	mg/L	106.7	90	110			
L13594-04DUP	DUP	08/16/13 15:52			2320	2380	mg/L				2.6	20	
L13751-04AS	AS	08/16/13 16:27	WI130501-1	30	36.7	69.9	mg/L	110.7	90	110			M1

SPF Water Engineering

ACZ Project ID: ***L13751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13751-01	WG349448	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349156	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349292	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349448	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13751-02	WG349448	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349156	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349292	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349448	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13751-03	WG349448	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349156	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349292	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349448	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13751-04	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349156	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349292	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13751-05	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349156	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349292	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13751***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13751
Date Received: 08/08/2013 10:38
Received By: mtb
Date Printed: 8/8/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA18139	8.8	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13751

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe, Jason Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SHORT-HOLDS-WETCHEM
PW-4	8/6/13 11:30		1	X
GW-4	8/6/13 12:25		1	X
PW-1	8/6/13 14:50		1	X
GW-1	8/6/13 15:35		1	X
59761	8/6/13 16:30		1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/7/13 8:00		8-8-13 10:30

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13751 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

4/8/2013

Quote Number: SHORT-HOLDS-WETCHEM

Matrix: Ground Water ~24 Samples, Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Wet Chemistry			
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	Calculation	$0.00
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Redu	0.02 mg/L	$8.80
Nitrite as N, dissolved	M353.2 - Automated Cadmium Redu	0.01 mg/L	$8.80
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$57.60**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 20, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q sampling
ACZ Project ID: L13761

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 09, 2013. This project has been assigned to ACZ's project number, L13761. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13761. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 19, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L13761-01***
Date Sampled: *08/07/13 11:35*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	13.6		*	mg/L	0.5	2.5	08/16/13 18:30	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.34	B	*	mg/L	0.1	0.5	08/16/13 18:30	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.460	H		mg/L	0.06	0.3	08/20/13 13:21	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3	2.46	H	*	mg/L	0.06	0.3	08/09/13 21:00	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/09/13 20:39	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	294		*	mg/L	10	20	08/13/13 14:11	mss3
Sulfate	M300.0 - Ion Chromatography	1	27.1		*	mg/L	0.5	2.5	08/16/13 18:30	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L13761-02***
Date Sampled: *08/07/13 14:45*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	7.51		*	mg/L	0.5	2.5	08/16/13 18:47	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.76		*	mg/L	0.1	0.5	08/16/13 18:47	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.06	BH		mg/L	0.02	0.1	08/20/13 13:21	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.06	BH	*	mg/L	0.02	0.1	08/09/13 20:42	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/09/13 20:42	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	236		*	mg/L	10	20	08/13/13 14:12	mss3
Sulfate	M300.0 - Ion Chromatography	1	22.2		*	mg/L	0.5	2.5	08/16/13 18:47	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP DUPLICATE

ACZ Sample ID: ***L13761-03***
Date Sampled: *08/07/13 14:55*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	7.43		*	mg/L	0.5	2.5	08/16/13 19:05	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.76		*	mg/L	0.1	0.5	08/16/13 19:05	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.06	BH		mg/L	0.02	0.1	08/20/13 13:21	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.06	BH	*	mg/L	0.02	0.1	08/09/13 20:44	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/09/13 20:44	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	252		*	mg/L	10	20	08/13/13 14:14	mss3
Sulfate	M300.0 - Ion Chromatography	1	22.0		*	mg/L	0.5	2.5	08/16/13 19:05	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L13761-04***
Date Sampled: *08/07/13 17:00*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	19.7		*	mg/L	0.5	2.5	08/16/13 19:22	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.98		*	mg/L	0.1	0.5	08/16/13 19:22	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/20/13 13:22	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/09/13 20:45	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/09/13 20:45	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1220		*	mg/L	10	20	08/13/13 14:15	mss3
Sulfate	M300.0 - Ion Chromatography	10	626		*	mg/L	5	25	08/19/13 11:57	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13761***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	30		31.7	mg/L	105.7	90	110			
L13594-04DUP	DUP	08/16/13 15:52			38	38	mg/L				0	20	RA
L13751-04AS	AS	08/16/13 16:27	WI130501-1	30	12	43.7	mg/L	105.7	90	110			
L13804-01DUP	DUP	08/16/13 22:00			3.85	3.81	mg/L				1	20	RA
L13804-02AS	AS	08/16/13 22:35	WI130501-1	30	4.84	35.8	mg/L	103.2	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	1.5		1.62	mg/L	108	90	110			
L13594-04DUP	DUP	08/16/13 15:52			U	U	mg/L				0	20	RA
L13751-04AS	AS	08/16/13 16:27	WI130501-1	1.5	.45	2.06	mg/L	107.3	90	110			
L13804-01DUP	DUP	08/16/13 22:00			U	U	mg/L				0	20	RA
L13804-02AS	AS	08/16/13 22:35	WI130501-1	1.5	U	1.65	mg/L	110	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349223													
WG349223ICV	ICV	08/09/13 20:33	WI130712-3	2.416		2.332	mg/L	96.5	90	110			
WG349223ICB	ICB	08/09/13 20:35				U	mg/L		-0.06	0.06			
WG349223LFB	LFB	08/09/13 20:38	WI130215-3	2		1.991	mg/L	99.6	90	110			
L13761-02DUP	DUP	08/09/13 20:43			.06	.058	mg/L				3.4	20	RA
L13761-01AS	AS	08/09/13 21:04	WI130215-3	6	2.46	8.251	mg/L	96.5	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349223													
WG349223ICV	ICV	08/09/13 20:33	WI130712-3	.609		.567	mg/L	93.1	90	110			
WG349223ICB	ICB	08/09/13 20:35				U	mg/L		-0.03	0.03			
WG349223LFB	LFB	08/09/13 20:38	WI130215-3	1		1.007	mg/L	100.7	90	110			
L13761-01AS	AS	08/09/13 20:41	WI130215-3	1	U	.987	mg/L	98.7	90	110			
L13761-02DUP	DUP	08/09/13 20:43			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349357													
WG349357PBW	PBW	08/13/13 13:50				U	mg/L		-20	20			
WG349357LCSW	LCSW	08/13/13 13:51	PCN42845	260		254	mg/L	97.7	80	120			
L13791-01DUP	DUP	08/13/13 14:24			3850	3860	mg/L				0.3	10	

SPF Water Engineering

ACZ Project ID: ***L13761***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349565													
WG349565LFB	LFB	08/16/13 15:00	WI130501-1	30		32	mg/L	106.7	90	110			
L13594-04DUP	DUP	08/16/13 15:52			2320	2380	mg/L				2.6	20	
L13751-04AS	AS	08/16/13 16:27	WI130501-1	30	36.7	69.9	mg/L	110.7	90	110			M1
L13804-01DUP	DUP	08/16/13 22:00			44.1	43.8	mg/L				0.7	20	
L13804-02AS	AS	08/16/13 22:35	WI130501-1	30	46.5	76.9	mg/L	101.3	90	110			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13761***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13761-01	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349223	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349357	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13761***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13761-02	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349223	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349357	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13761***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13761-03	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349223	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349357	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13761***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13761-04	WG349565	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349223	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349357	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349565	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13761***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13761
Date Received: 08/09/2013 10:00
Received By: mtb
Date Printed: 8/12/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the Matrix Line 1 section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA18149	17.1	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13761

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe, Jason Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SHORT-HOLDS -WETCHEM
Government Corral Spring	8/7/13 11:35	~~X~~	1	X
Bishop	8/7/13 14:45	(EB)	1	X
Bishop Duplicate	8/7/13 14:55		1	X
59763	8/7/13 17:00		1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/8/13 8:00		
		MC 8-9-13	10:00

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13761 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 05, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13763

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 09, 2013. This project has been assigned to ACZ's project number, L13763. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13763. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 05, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L13763-01***
Date Sampled: *08/06/13 11:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/13/13 12:48	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/15/13 9:41	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/15/13 16:38	mla
Total Hot Plate Digestion	M200.2 ICP								08/15/13 15:20	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/19/13 15:54	las

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L13763-01***
Date Sampled: *08/06/13 11:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.03	0.2	08/12/13 19:29	jjc
Aluminum, total	M200.7 ICP	1	5.98		*	mg/L	0.03	0.2	08/16/13 22:53	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/16/13 5:24	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/20/13 16:07	scp
Arsenic, dissolved	M200.8 ICP-MS	1	0.0137			mg/L	0.0002	0.001	08/16/13 5:24	msh
Arsenic, total	M200.8 ICP-MS	1	0.0168			mg/L	0.0002	0.001	08/20/13 16:07	scp
Barium, dissolved	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	08/12/13 19:29	jjc
Barium, total	M200.7 ICP	1	0.018	B		mg/L	0.003	0.02	08/16/13 22:53	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:24	msh
Beryllium, total	M200.8 ICP-MS	1	0.00031			mg/L	0.00005	0.0003	08/20/13 16:07	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/12/13 19:29	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 22:53	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/12/13 19:29	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	08/16/13 22:53	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:24	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:07	scp
Calcium, dissolved	M200.7 ICP	1	9.3			mg/L	0.2	1	08/12/13 19:29	jjc
Calcium, total	M200.7 ICP	1	13.0			mg/L	0.2	1	08/16/13 22:53	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/16/13 5:24	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/20/13 16:07	scp
Cobalt, dissolved	M200.8 ICP-MS	1	0.00090			mg/L	0.00005	0.0003	08/16/13 5:24	msh
Cobalt, total	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	08/20/13 16:07	scp
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:24	msh
Copper, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	08/20/13 16:07	scp
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:29	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 22:53	aeb
Iron, dissolved	M200.7 ICP	1	0.30			mg/L	0.02	0.05	08/12/13 19:29	jjc
Iron, total	M200.7 ICP	1	5.82			mg/L	0.02	0.05	08/16/13 22:53	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:24	msh
Lead, total	M200.8 ICP-MS	1	0.0066			mg/L	0.0001	0.0005	08/20/13 16:07	scp
Lithium, dissolved	M200.7 ICP	1	0.10			mg/L	0.02	0.1	08/12/13 19:29	jjc
Lithium, total	M200.7 ICP	1	0.10			mg/L	0.02	0.1	08/16/13 22:53	aeb
Magnesium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.2	1	08/12/13 19:29	jjc
Magnesium, total	M200.7 ICP	1	1.6			mg/L	0.2	1	08/16/13 22:53	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0409			mg/L	0.0005	0.003	08/16/13 5:24	msh
Manganese, total	M200.8 ICP-MS	1	0.0689		*	mg/L	0.0005	0.003	08/20/13 16:07	scp
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	08/30/13 13:42	scp
Mercury, total	M1631, Atomic Fluorescence	20	5	B	*	ng/L	4	10	09/04/13 17:11	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0114			mg/L	0.0005	0.003	08/16/13 5:24	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0121			mg/L	0.0005	0.003	08/20/13 16:07	scp
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/16/13 5:24	msh
Nickel, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	08/20/13 16:07	scp
Potassium, dissolved	M200.7 ICP	1	0.9	B		mg/L	0.3	2	08/12/13 19:29	jjc

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PW-4

ACZ Sample ID: ***L13763-01***
Date Sampled: *08/06/13 11:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.3	B		mg/L	0.3	2	08/16/13 22:53	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:29	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 22:53	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/16/13 5:24	msh
Selenium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0003	08/20/13 16:07	scp
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:24	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:07	scp
Sodium, dissolved	M200.7 ICP	1	188			mg/L	0.3	2	08/12/13 19:29	jjc
Sodium, total	M200.7 ICP	1	189			mg/L	0.3	2	08/16/13 22:53	aeb
Strontium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	08/12/13 19:29	jjc
Strontium, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	08/16/13 22:53	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:24	msh
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/20/13 16:07	scp
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/16/13 5:24	msh
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	08/20/13 16:07	scp
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/12/13 19:29	jjc
Titanium, total	M200.7 ICP	1	0.020	B		mg/L	0.005	0.03	08/16/13 22:53	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:24	msh
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	08/20/13 16:07	scp
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/16/13 5:24	msh
Vanadium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0002	0.001	08/20/13 16:07	scp
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/12/13 19:29	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 22:53	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	203		*	mg/L	2	20	08/16/13 0:00	abm
Carbonate as CaCO3		1	12	B	*	mg/L	2	20	08/16/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Total Alkalinity		1	215		*	mg/L	2	20	08/16/13 0:00	abm
Conductivity @25C	SM2510B	1	888		*	umhos/cm	1	10	08/14/13 14:26	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/13/13 15:43	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 21:49	pjb
Hardness as CaCO3	SM2340B - Calculation		25			mg/L	1	7	09/05/13 11:54	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.03	B	*	mg/L	0.02	0.1	08/17/13 15:55	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.18	B	*	mg/L	0.05	0.5	08/15/13 12:31	bsu
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	08/15/13 23:21	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	4	180		*	mg/L	20	80	08/12/13 11:46	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L13763-02***
Date Sampled: *08/06/13 12:25*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/13/13 12:56	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/15/13 9:54	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/15/13 16:45	mla
Total Hot Plate Digestion	M200.2 ICP								08/15/13 15:33	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/19/13 16:06	las

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L13763-02***
Date Sampled: *08/06/13 12:25*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	08/12/13 19:32	jjc
Aluminum, total	M200.7 ICP	1	0.68		*	mg/L	0.03	0.2	08/16/13 22:57	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/16/13 5:27	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/20/13 16:11	scp
Arsenic, dissolved	M200.8 ICP-MS	1	0.0120			mg/L	0.0002	0.001	08/16/13 5:27	msh
Arsenic, total	M200.8 ICP-MS	1	0.0126			mg/L	0.0002	0.001	08/20/13 16:11	scp
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/12/13 19:32	jjc
Barium, total	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	08/16/13 22:57	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:27	msh
Beryllium, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	08/20/13 16:11	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/12/13 19:32	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 22:57	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/12/13 19:32	jjc
Boron, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	08/16/13 22:57	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:27	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:11	scp
Calcium, dissolved	M200.7 ICP	1	3.7			mg/L	0.2	1	08/12/13 19:32	jjc
Calcium, total	M200.7 ICP	1	4.2			mg/L	0.2	1	08/16/13 22:57	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/16/13 5:27	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/20/13 16:11	scp
Cobalt, dissolved	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	08/16/13 5:27	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	08/20/13 16:11	scp
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:27	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/20/13 16:11	scp
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:32	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 22:57	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/12/13 19:32	jjc
Iron, total	M200.7 ICP	1	0.28			mg/L	0.02	0.05	08/16/13 22:57	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:27	msh
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	08/20/13 16:11	scp
Lithium, dissolved	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	08/12/13 19:32	jjc
Lithium, total	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	08/16/13 22:57	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	08/12/13 19:32	jjc
Magnesium, total	M200.7 ICP	1	0.2	B		mg/L	0.2	1	08/16/13 22:57	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0005	0.003	08/16/13 5:27	msh
Manganese, total	M200.8 ICP-MS	1	0.0098		*	mg/L	0.0005	0.003	08/20/13 16:11	scp
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	08/30/13 13:49	scp
Mercury, total	M1631, Atomic Fluorescence	5	1	B	*	ng/L	1	3	09/04/13 17:32	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0094			mg/L	0.0005	0.003	08/16/13 5:27	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0100			mg/L	0.0005	0.003	08/20/13 16:11	scp
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/16/13 5:27	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/20/13 16:11	scp
Potassium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.3	2	08/12/13 19:32	jjc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-4

ACZ Sample ID: ***L13763-02***
Date Sampled: *08/06/13 12:25*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.3	2	08/16/13 22:57	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:32	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 22:57	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/16/13 5:27	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/20/13 16:11	scp
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:27	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:11	scp
Sodium, dissolved	M200.7 ICP	1	151			mg/L	0.3	2	08/12/13 19:32	jjc
Sodium, total	M200.7 ICP	1	152			mg/L	0.3	2	08/16/13 22:57	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/12/13 19:32	jjc
Strontium, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	08/16/13 22:57	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:27	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:11	scp
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/16/13 5:27	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/20/13 16:11	scp
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/12/13 19:32	jjc
Titanium, total	M200.7 ICP	1	0.007	B		mg/L	0.005	0.03	08/16/13 22:57	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:27	msh
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	08/20/13 16:11	scp
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/16/13 5:27	msh
Vanadium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0002	0.001	08/20/13 16:11	scp
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/12/13 19:32	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 22:57	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	179		*	mg/L	2	20	08/16/13 0:00	abm
Carbonate as CaCO3		1	14	B	*	mg/L	2	20	08/16/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Total Alkalinity		1	193		*	mg/L	2	20	08/16/13 0:00	abm
Conductivity @25C	SM2510B	1	682		*	umhos/cm	1	10	08/14/13 14:35	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/13/13 15:44	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 21:50	pjb
Hardness as CaCO3	SM2340B - Calculation		9			mg/L	1	7	09/05/13 11:55	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/17/13 15:24	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.10	B	*	mg/L	0.05	0.5	08/15/13 12:09	bsu
pH (lab)	SM4500H+ B									
pH		1	8.7	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	08/15/13 23:22	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	22		*	mg/L	5	20	08/12/13 11:48	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L13763-03***
Date Sampled: *08/06/13 14:50*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/13/13 13:03	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/15/13 10:01	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/15/13 14:13	mla
Total Hot Plate Digestion	M200.2 ICP								08/15/13 16:12	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/19/13 16:18	las

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L13763-03***
Date Sampled: *08/06/13 14:50*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/12/13 19:42	jjc
Aluminum, total	M200.7 ICP	1	0.06	B	*	mg/L	0.03	0.2	08/16/13 23:06	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/16/13 5:31	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/20/13 16:14	scp
Arsenic, dissolved	M200.8 ICP-MS	1	0.0302			mg/L	0.0002	0.001	08/16/13 5:31	msh
Arsenic, total	M200.8 ICP-MS	1	0.0294			mg/L	0.0002	0.001	08/20/13 16:14	scp
Barium, dissolved	M200.7 ICP	1	0.029			mg/L	0.003	0.02	08/12/13 19:42	jjc
Barium, total	M200.7 ICP	1	0.032			mg/L	0.003	0.02	08/16/13 23:06	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:31	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:14	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/12/13 19:42	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 23:06	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/12/13 19:42	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/16/13 23:06	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:31	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:14	scp
Calcium, dissolved	M200.7 ICP	1	30.1			mg/L	0.2	1	08/12/13 19:42	jjc
Calcium, total	M200.7 ICP	1	31.0			mg/L	0.2	1	08/16/13 23:06	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	08/16/13 5:31	msh
Chromium, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.002	08/20/13 16:14	scp
Cobalt, dissolved	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	08/16/13 5:31	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	08/20/13 16:14	scp
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:31	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/20/13 16:14	scp
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:42	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:06	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/12/13 19:42	jjc
Iron, total	M200.7 ICP	1	0.26			mg/L	0.02	0.05	08/16/13 23:06	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:31	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:14	scp
Lithium, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.02	0.1	08/12/13 19:42	jjc
Lithium, total	M200.7 ICP	1	0.07	B		mg/L	0.02	0.1	08/16/13 23:06	aeb
Magnesium, dissolved	M200.7 ICP	1	3.3			mg/L	0.2	1	08/12/13 19:42	jjc
Magnesium, total	M200.7 ICP	1	3.6			mg/L	0.2	1	08/16/13 23:06	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	08/16/13 5:31	msh
Manganese, total	M200.8 ICP-MS	1	0.0101		*	mg/L	0.0005	0.003	08/20/13 16:14	scp
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	08/30/13 13:56	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/04/13 17:39	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0005	0.003	08/16/13 5:31	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0005	0.003	08/20/13 16:14	scp
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/16/13 5:31	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/20/13 16:14	scp
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.3	2	08/12/13 19:42	jjc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: PW-1

ACZ Sample ID: ***L13763-03***
Date Sampled: *08/06/13 14:50*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.2			mg/L	0.3	2	08/16/13 23:06	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:42	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:06	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	08/16/13 5:31	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	08/20/13 16:14	scp
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:31	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:14	scp
Sodium, dissolved	M200.7 ICP	1	38.9			mg/L	0.3	2	08/12/13 19:42	jjc
Sodium, total	M200.7 ICP	1	39.9			mg/L	0.3	2	08/16/13 23:06	aeb
Strontium, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	08/12/13 19:42	jjc
Strontium, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	08/16/13 23:06	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:31	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:14	scp
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/16/13 5:31	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/20/13 16:14	scp
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/12/13 19:42	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 23:06	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	08/16/13 5:31	msh
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	08/20/13 16:14	scp
Vanadium, dissolved	M200.8 ICP-MS	1	0.0101			mg/L	0.0002	0.001	08/16/13 5:31	msh
Vanadium, total	M200.8 ICP-MS	1	0.0097			mg/L	0.0002	0.001	08/20/13 16:14	scp
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/12/13 19:42	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 23:06	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	129		*	mg/L	2	20	08/16/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Total Alkalinity		1	129		*	mg/L	2	20	08/16/13 0:00	abm
Conductivity @25C	SM2510B	1	357		*	umhos/cm	1	10	08/14/13 14:44	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/13/13 15:45	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 21:51	pjb
Hardness as CaCO3	SM2340B - Calculation		89			mg/L	1	7	09/05/13 11:55	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.58		*	mg/L	0.02	0.1	08/17/13 15:26	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/15/13 12:10	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	08/15/13 23:37	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	6	B	*	mg/L	5	20	08/12/13 11:49	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L13763-04***
Date Sampled: *08/06/13 15:35*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/13/13 13:18	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/15/13 10:07	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/15/13 14:26	mla
Total Hot Plate Digestion	M200.2 ICP								08/15/13 16:25	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/19/13 16:30	las

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L13763-04***
Date Sampled: *08/06/13 15:35*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/12/13 19:45	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/16/13 23:09	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	08/16/13 5:41	msh
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	08/20/13 16:17	scp
Arsenic, dissolved	M200.8 ICP-MS	1	0.0307			mg/L	0.0002	0.001	08/16/13 5:41	msh
Arsenic, total	M200.8 ICP-MS	1	0.0296			mg/L	0.0002	0.001	08/20/13 16:17	scp
Barium, dissolved	M200.7 ICP	1	0.029			mg/L	0.003	0.02	08/12/13 19:45	jjc
Barium, total	M200.7 ICP	1	0.031			mg/L	0.003	0.02	08/16/13 23:09	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:41	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:17	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/12/13 19:45	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 23:09	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/12/13 19:45	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/16/13 23:09	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:41	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:17	scp
Calcium, dissolved	M200.7 ICP	1	45.2			mg/L	0.2	1	08/12/13 19:45	jjc
Calcium, total	M200.7 ICP	1	46.5			mg/L	0.2	1	08/16/13 23:09	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	08/16/13 5:41	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	08/20/13 16:17	scp
Cobalt, dissolved	M200.8 ICP-MS	1	0.00020	B		mg/L	0.00005	0.0003	08/16/13 5:41	msh
Cobalt, total	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	08/20/13 16:17	scp
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:41	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/20/13 16:17	scp
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:45	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:09	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/12/13 19:45	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/16/13 23:09	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:41	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:17	scp
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/12/13 19:45	jjc
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/16/13 23:09	aeb
Magnesium, dissolved	M200.7 ICP	1	8.4			mg/L	0.2	1	08/12/13 19:45	jjc
Magnesium, total	M200.7 ICP	1	8.8			mg/L	0.2	1	08/16/13 23:09	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:41	msh
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/20/13 16:17	scp
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	08/30/13 14:03	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/04/13 17:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	08/16/13 5:41	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	08/20/13 16:17	scp
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/16/13 5:41	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/20/13 16:17	scp
Potassium, dissolved	M200.7 ICP	1	6.0			mg/L	0.3	2	08/12/13 19:45	jjc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: GW-1

ACZ Sample ID: ***L13763-04***
Date Sampled: *08/06/13 15:35*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.3			mg/L	0.3	2	08/16/13 23:09	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:45	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:09	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0003	08/16/13 5:41	msh
Selenium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0003	08/20/13 16:17	scp
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:41	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:17	scp
Sodium, dissolved	M200.7 ICP	1	26.4			mg/L	0.3	2	08/12/13 19:45	jjc
Sodium, total	M200.7 ICP	1	27.3			mg/L	0.3	2	08/16/13 23:09	aeb
Strontium, dissolved	M200.7 ICP	1	0.21			mg/L	0.01	0.05	08/12/13 19:45	jjc
Strontium, total	M200.7 ICP	1	0.22			mg/L	0.01	0.05	08/16/13 23:09	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:41	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:17	scp
Tin, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	08/16/13 5:41	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/20/13 16:17	scp
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/12/13 19:45	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 23:09	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	08/16/13 5:41	msh
Uranium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	08/20/13 16:17	scp
Vanadium, dissolved	M200.8 ICP-MS	1	0.0184			mg/L	0.0002	0.001	08/16/13 5:41	msh
Vanadium, total	M200.8 ICP-MS	1	0.0173			mg/L	0.0002	0.001	08/20/13 16:17	scp
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/12/13 19:45	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 23:09	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	148		*	mg/L	2	20	08/16/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Total Alkalinity		1	148		*	mg/L	2	20	08/16/13 0:00	abm
Conductivity @25C	SM2510B	1	420		*	umhos/cm	1	10	08/14/13 14:54	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/13/13 15:47	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 21:52	pjb
Hardness as CaCO3	SM2340B - Calculation		148			mg/L	1	7	09/05/13 11:55	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.99		*	mg/L	0.02	0.1	08/17/13 15:28	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.10	B	*	mg/L	0.05	0.5	08/15/13 12:11	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/15/13 23:39	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 11:50	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59761

ACZ Sample ID: ***L13763-05***
Date Sampled: *08/06/13 16:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/16/13 10:16	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/15/13 10:14	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/15/13 14:39	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/19/13 16:42	las
Total Hot Plate Digestion	M200.2 ICP								08/15/13 16:38	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59761

ACZ Sample ID: ***L13763-05***
Date Sampled: *08/06/13 16:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/12/13 19:48	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/16/13 23:12	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/16/13 5:52	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/20/13 16:20	scp
Arsenic, dissolved	M200.8 ICP-MS	1	0.0243			mg/L	0.0002	0.001	08/16/13 5:52	msh
Arsenic, total	M200.8 ICP-MS	1	0.0240			mg/L	0.0002	0.001	08/20/13 16:20	scp
Barium, dissolved	M200.7 ICP	1	0.043			mg/L	0.003	0.02	08/12/13 19:48	jjc
Barium, total	M200.7 ICP	1	0.046			mg/L	0.003	0.02	08/16/13 23:12	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:52	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:20	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/12/13 19:48	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 23:12	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/12/13 19:48	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/16/13 23:12	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:52	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:20	scp
Calcium, dissolved	M200.7 ICP	1	41.9			mg/L	0.2	1	08/12/13 19:48	jjc
Calcium, total	M200.7 ICP	1	43.4			mg/L	0.2	1	08/16/13 23:12	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	08/16/13 5:52	msh
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	08/20/13 16:20	scp
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	08/16/13 5:52	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	08/20/13 16:20	scp
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:52	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/20/13 16:20	scp
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:48	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:12	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/12/13 19:48	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/16/13 23:12	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:52	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:20	scp
Lithium, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.02	0.1	08/12/13 19:48	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	08/16/13 23:12	aeb
Magnesium, dissolved	M200.7 ICP	1	9.9			mg/L	0.2	1	08/12/13 19:48	jjc
Magnesium, total	M200.7 ICP	1	10.4			mg/L	0.2	1	08/16/13 23:12	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/16/13 5:52	msh
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/20/13 16:20	scp
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	08/30/13 14:10	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.4	B	*	ng/L	0.4	1	09/04/13 17:53	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0026	B		mg/L	0.0005	0.003	08/16/13 5:52	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	08/20/13 16:20	scp
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/16/13 5:52	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/20/13 16:20	scp
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.3	2	08/12/13 19:48	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59761

ACZ Sample ID: ***L13763-05***
Date Sampled: *08/06/13 16:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.3	2	08/16/13 23:12	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/12/13 19:48	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 23:12	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	08/16/13 5:52	msh
Selenium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	08/20/13 16:20	scp
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/16/13 5:52	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/20/13 16:20	scp
Sodium, dissolved	M200.7 ICP	1	23.5			mg/L	0.3	2	08/12/13 19:48	jjc
Sodium, total	M200.7 ICP	1	24.5			mg/L	0.3	2	08/16/13 23:12	aeb
Strontium, dissolved	M200.7 ICP	1	0.22			mg/L	0.01	0.05	08/12/13 19:48	jjc
Strontium, total	M200.7 ICP	1	0.23			mg/L	0.01	0.05	08/16/13 23:12	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/16/13 5:52	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/20/13 16:20	scp
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/16/13 5:52	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/20/13 16:20	scp
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/12/13 19:48	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 23:12	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	08/16/13 5:52	msh
Uranium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	08/20/13 16:20	scp
Vanadium, dissolved	M200.8 ICP-MS	1	0.0206			mg/L	0.0002	0.001	08/16/13 5:52	msh
Vanadium, total	M200.8 ICP-MS	1	0.0198			mg/L	0.0002	0.001	08/20/13 16:20	scp
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/12/13 19:48	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 23:12	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	148		*	mg/L	2	20	08/16/13 0:00	abm
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/13 0:00	abm
Total Alkalinity		1	148		*	mg/L	2	20	08/16/13 0:00	abm
Conductivity @25C	SM2510B	1	408		*	umhos/cm	1	10	08/14/13 15:03	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 22:23	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/16/13 21:53	pjb
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	1	7	09/05/13 11:56	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.51		*	mg/L	0.02	0.1	08/17/13 15:29	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/15/13 12:12	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/15/13 23:41	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 11:52	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L13763-06***
Date Sampled: *08/06/13 12:30*
Date Received: *08/09/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/04/13 17:04	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13763***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349573													
WG349573PBW1	PBW	08/16/13 14:35				U	mg/L		-20	20			
WG349573LCSW2	LCSW	08/16/13 14:48	WC130806-	820.0001		758.1	mg/L	92.5	90	110			
L13765-05DUP	DUP	08/16/13 17:35			28	25.7	mg/L				8.6	20	
WG349573LCSW5	LCSW	08/16/13 17:49	WC130806-	820.0001		786.3	mg/L	95.9	90	110			
WG349573PBW2	PBW	08/16/13 17:57				U	mg/L		-20	20			
WG349573LCSW8	LCSW	08/16/13 21:21	WC130806-	820.0001		790.3	mg/L	96.4	90	110			
WG349573PBW3	PBW	08/16/13 21:29				2.4	mg/L		-20	20			
WG349573LCSW11	LCSW	08/17/13 0:49	WC130806-	820.0001		790.8	mg/L	96.4	90	110			
WG349573PBW4	PBW	08/17/13 0:57				U	mg/L		-20	20			
WG349573LCSW14	LCSW	08/17/13 4:00	WC130806-	820.0001		776	mg/L	94.6	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.982	mg/L	99.1	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.09	0.09			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1.0011		1.033	mg/L	103.2	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1.0011	.04	1.083	mg/L	104.2	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1.0011	.04	1.066	mg/L	102.5	85	115	1.58	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.999	mg/L	100	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.09	0.09			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.066	0.066			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1.0011		1.015	mg/L	101.4	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1.0011	.68	2.721	mg/L	203.9	70	130			M1
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1.0011	.68	2.703	mg/L	202.1	70	130	0.66	20	M1

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.02		.02161	mg/L	108.1	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0012	0.0012			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.01		.0097	mg/L	97	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.01	U	.01037	mg/L	103.7	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.01	U	.01021	mg/L	102.1	70	130	1.55	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.02		.02037	mg/L	101.9	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0012	0.0012			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00088	0.00088			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.01		.01079	mg/L	107.9	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00088	0.00088			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.01		.01061	mg/L	106.1	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.01	U	.01062	mg/L	106.2	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.01	U	.01061	mg/L	106.1	70	130	0.09	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05368	mg/L	107.4	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0006	0.0006			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04856	mg/L	97	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	.0302	.08591	mg/L	111.3	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	.0302	.08429	mg/L	108.1	70	130	1.9	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05309	mg/L	106.2	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0006	0.0006			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00044	0.00044			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.05204	mg/L	104	85	115			
WG349677LRB	LRB	08/20/13 15:55				.00029	mg/L		-0.00044	0.00044			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.05043	mg/L	100.8	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	.0031	.05294	mg/L	99.6	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	.0031	.05219	mg/L	98.1	70	130	1.43	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.97	mg/L	98.5	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.009	0.009			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	.5		.4939	mg/L	98.8	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	.5	U	.4953	mg/L	99.1	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	.5	U	.4947	mg/L	98.9	85	115	0.12	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.9812	mg/L	99.1	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.009	0.009			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.0066	0.0066			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	.5		.49	mg/L	98	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	.5	.006	.4996	mg/L	98.7	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	.5	.006	.501	mg/L	99	70	130	0.28	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.04565	mg/L	91.3	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.00015	0.00015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.0501		.04305	mg/L	85.9	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.0501	U	.0462	mg/L	92.2	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.0501	U	.0463	mg/L	92.4	70	130	0.22	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04795	mg/L	95.9	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.00015	0.00015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00011	0.00011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.0501		.04828	mg/L	96.4	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00011	0.00011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.0501		.04789	mg/L	95.6	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.0501	U	.04657	mg/L	93	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.0501	U	.04595	mg/L	91.7	70	130	1.34	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.976	mg/L	98.8	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.12	0.12			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1		.973	mg/L	97.3	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1	U	.997	mg/L	99.7	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1	U	1.007	mg/L	100.7	85	115	1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.996	mg/L	99.8	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.12	0.12			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.088	0.088			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1		.997	mg/L	99.7	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1	U	1.016	mg/L	101.6	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1	U	1.02	mg/L	102	70	130	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.995	mg/L	99.8	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.03	0.03			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	.5005		.502	mg/L	100.3	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	.5005	.14	.647	mg/L	101.3	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	.5005	.14	.64	mg/L	99.9	85	115	1.09	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		2.016	mg/L	100.8	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.03	0.03			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.022	0.022			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	.5005		.506	mg/L	101.1	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	.5005	.15	.657	mg/L	101.3	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	.5005	.15	.65	mg/L	99.9	70	130	1.07	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05164	mg/L	103.3	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.0501		.04724	mg/L	94.3	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.0501	U	.05086	mg/L	101.5	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.0501	U	.05064	mg/L	101.1	70	130	0.43	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05233	mg/L	104.7	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.0501		.05172	mg/L	103.2	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.0501		.05151	mg/L	102.8	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.0501	.001	.0514	mg/L	100.6	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.0501	.001	.05096	mg/L	99.7	70	130	0.86	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	100		99.99	mg/L	100	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.6	0.6			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	68.0028		71.51	mg/L	105.2	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	68.0028	3.7	75.82	mg/L	106.1	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	68.0028	3.7	75.26	mg/L	105.2	85	115	0.74	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	100		98.75	mg/L	98.8	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.6	0.6			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.44	0.44			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	68.0028		70.08	mg/L	103.1	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	68.0028	4.2	74.78	mg/L	103.8	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	68.0028	4.2	74.41	mg/L	103.2	70	130	0.5	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05028	mg/L	100.6	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0015	0.0015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04875	mg/L	97.4	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	.0006	.05015	mg/L	99	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	.0006	.04926	mg/L	97.2	70	130	1.79	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04859	mg/L	97.2	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0015	0.0015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.0011	0.0011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.0472	mg/L	94.3	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.0011	0.0011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.0482	mg/L	96.3	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	U	.04626	mg/L	92.4	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	U	.04587	mg/L	91.6	70	130	0.85	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05125	mg/L	102.5	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.00015	0.00015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04811	mg/L	96.1	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	.00012	.05075	mg/L	101.2	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	.00012	.05026	mg/L	100.2	70	130	0.97	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04948	mg/L	99	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.00015	0.00015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00011	0.00011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04983	mg/L	99.6	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00011	0.00011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.0509	mg/L	101.7	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	.00056	.04918	mg/L	97.1	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	.00056	.04913	mg/L	97	70	130	0.1	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349414													
WG349414LCSW1	LCSW	08/14/13 12:42	PCN42819	1408.8		1465	umhos/cm	104	90	110			
L13765-04DUP	DUP	08/14/13 15:39			178	178.2	umhos/cm				0.1	20	
WG349414LCSW4	LCSW	08/14/13 15:40	PCN42819	1408.8		1463	umhos/cm	103.8	90	110			
WG349414LCSW7	LCSW	08/14/13 18:50	PCN42819	1408.8		1448.7	umhos/cm	102.8	90	110			
WG349414LCSW10	LCSW	08/14/13 22:31	PCN42819	1408.8		1431.4	umhos/cm	101.6	90	110			
WG349414LCSW13	LCSW	08/15/13 1:48	PCN42819	1408.8		1421.2	umhos/cm	100.9	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05099	mg/L	102	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0015	0.0015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04897	mg/L	97.8	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	U	.04827	mg/L	96.4	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	U	.04721	mg/L	94.3	70	130	2.22	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05198	mg/L	104	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0015	0.0015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.0011	0.0011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04973	mg/L	99.4	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.0011	0.0011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.04963	mg/L	99.2	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	.0011	.04858	mg/L	94.9	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	.0011	.0476	mg/L	92.9	70	130	2.04	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349360													
WG349360ICV	ICV	08/13/13 13:40	WI130807-6	.3		.305	mg/L	101.7	90	110			
WG349360ICB	ICB	08/13/13 13:41				U	mg/L		-0.003	0.003			
WG349378													
WG349342LRB	LRB	08/13/13 15:31				U	mg/L		-0.003	0.003			
WG349342LFB	LFB	08/13/13 15:32	WI130807-2	.2		.1912	mg/L	95.6	90	110			
L13670-03DUP	DUP	08/13/13 15:33			U	U	mg/L				0	20	RA
L13670-04LFM	LFM	08/13/13 15:35	WI130807-2	.2	U	.1838	mg/L	91.9	90	110			
L13763-03DUP	DUP	08/13/13 15:46			U	U	mg/L				0	20	RA
L13763-04LFM	LFM	08/13/13 15:47	WI130807-2	.2	U	.1725	mg/L	86.3	90	110			M2
WG349605													
WG349605ICV	ICV	08/16/13 21:43	WI130807-6	.3		.2951	mg/L	98.4	90	110			
WG349605ICB	ICB	08/16/13 21:44				U	mg/L		-0.003	0.003			
WG349606													
WG349552LRB	LRB	08/16/13 22:21				U	mg/L		-0.003	0.003			
WG349552LFB	LFB	08/16/13 22:22	WI130807-2	.2		.2064	mg/L	103.2	90	110			
L13763-05DUP	DUP	08/16/13 22:24			U	U	mg/L				0	20	RA
L13764-08LFM	LFM	08/16/13 22:26	WI130807-2	.2	.004	.1727	mg/L	84.4	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349605													
WG349605ICV	ICV	08/16/13 21:43	WI130807-6	.3		.2951	mg/L	98.4	90	110			
WG349605ICB	ICB	08/16/13 21:44				U	mg/L		-0.003	0.003			
WG349470LRB	LRB	08/16/13 21:45				U	mg/L		-0.003	0.003			
WG349470LFB	LFB	08/16/13 21:46	WI130807-4	.2		.206	mg/L	103	90	110			
L13746-01DUP	DUP	08/16/13 21:48			U	U	mg/L				0	20	RA
L13763-01LFM	LFM	08/16/13 21:50	WI130807-4	.2	U	.189	mg/L	94.5	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		2.01	mg/L	100.5	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.3	0.3			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1		1	mg/L	100	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1	U	1.02	mg/L	102	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1	U	1.03	mg/L	103	85	115	0.98	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		2.03	mg/L	101.5	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.3	0.3			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.22	0.22			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1		1.02	mg/L	102	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1	U	1.02	mg/L	102	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1	U	1.01	mg/L	101	70	130	0.99	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.977	mg/L	98.9	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.06	0.06			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1.0014		1.014	mg/L	101.3	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1.0014	U	1.041	mg/L	104	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1.0014	U	1.097	mg/L	109.5	85	115	5.24	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.995	mg/L	99.8	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.06	0.06			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.044	0.044			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1.0014		1.024	mg/L	102.3	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1.0014	.29	1.554	mg/L	127.2	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1.0014	.29	1.538	mg/L	125.6	70	130	1.03	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.04983	mg/L	99.7	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04445	mg/L	88.8	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	U	.04787	mg/L	95.6	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	U	.04738	mg/L	94.7	70	130	1.03	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05284	mg/L	105.7	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.05011	mg/L	100.1	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.05059	mg/L	101.1	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	.008	.05648	mg/L	96.9	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	.008	.05598	mg/L	95.9	70	130	0.89	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.987	mg/L	99.4	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.06	0.06			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1		.978	mg/L	97.8	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1	.09	1.063	mg/L	97.3	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1	.09	1.058	mg/L	96.8	85	115	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.993	mg/L	99.7	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.06	0.06			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.044	0.044			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1		.969	mg/L	96.9	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1	.09	1.073	mg/L	98.3	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1	.09	1.072	mg/L	98.2	70	130	0.09	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	100		98.47	mg/L	98.5	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.6	0.6			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	49.99752		50.25	mg/L	100.5	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	49.99752	U	50.95	mg/L	101.9	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	49.99752	U	50.49	mg/L	101	85	115	0.91	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	100		96.57	mg/L	96.6	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.6	0.6			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.44	0.44			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	49.99752		49.26	mg/L	98.5	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	49.99752	.2	49.81	mg/L	99.2	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	49.99752	.2	49.67	mg/L	98.9	70	130	0.28	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05112	mg/L	102.2	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0015	0.0015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04759	mg/L	95.1	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	.0019	.05185	mg/L	99.8	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	.0019	.05163	mg/L	99.4	70	130	0.43	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04916	mg/L	98.3	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0015	0.0015			
WG349540LRB	LRB	08/20/13 15:28				.00081	mg/L		-0.0011	0.0011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04991	mg/L	99.7	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.0011	0.0011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.05083	mg/L	101.6	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	.6415	.672	mg/L	60.9	70	130			M3
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	.6415	.6753	mg/L	67.5	70	130	0.49	20	M3

SPF Water Engineering

ACZ Project ID: ***L13763***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350216													
WG350216ICV	ICV	08/29/13 12:32	HG130725-7	10		9.05	ng/L	90.5	79	121			
WG350216ICB	ICB	08/29/13 12:38				U	ng/L		-0.5	0.5			
WG350216ICV2	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350216ICB2	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322													
WG350322ICV	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350322ICB	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322PQV	PQV	08/30/13 9:58	HG130725-8	.5		.6	ng/L	120	70	130			
WG350322CCV1	CCV	08/30/13 12:52	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350322CCB1	CCB	08/30/13 12:59				U	ng/L		-0.5	0.5			
WG350322LFB	LFB	08/30/13 13:06	HG130725-9	2		1.85	ng/L	92.5	71	125			
L13593-01MS	MS	08/30/13 13:28	HG5XPREP	50	3	11.5	ng/L	85	71	125			
L13593-01MSD	MSD	08/30/13 13:35	HG5XPREP	50	3	11.9	ng/L	89	71	125	3.42	24	
WG350322CCV2	CCV	08/30/13 14:17	HG130725-7	10		9.58	ng/L	95.8	76.5	123.4			
WG350322CCB2	CCB	08/30/13 14:24				U	ng/L		-0.5	0.5			
WG350322CCV3	CCV	08/30/13 15:13	HG130725-7	10		8.82	ng/L	88.2	76.5	123.4			
WG350322CCB3	CCB	08/30/13 15:20				U	ng/L		-0.5	0.5			
WG350322CCV4	CCV	08/30/13 16:23	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350322CCB4	CCB	08/30/13 16:30				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350543													
WG350543ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350543ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350590													
WG350590ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350590ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350590PQV	PQV	09/04/13 13:01	HG130725-8	.5		.54	ng/L	108	70	130			
WG350590CCV1	CCV	09/04/13 16:35	HG130725-7	10		8.66	ng/L	86.6	76.5	123.4			
WG350590CCB1	CCB	09/04/13 16:42				U	ng/L		-0.5	0.5			
WG350590LFB	LFB	09/04/13 16:57	HG130725-9	2		1.51	ng/L	75.5	71	125			
L13763-01MS	MS	09/04/13 17:18	HG20XPRE	800	5	38.8	ng/L	84.5	71	125			
L13763-01MSD	MSD	09/04/13 17:25	HG20XPRE	800	5	41	ng/L	90	71	125	5.51	24	
WG350590CCV2	CCV	09/04/13 18:00	HG130725-7	10		9.07	ng/L	90.7	76.5	123.4			
WG350590CCB2	CCB	09/04/13 18:07				U	ng/L		-0.5	0.5			
WG350590CCV3	CCV	09/04/13 18:42	HG130725-7	10		8.9	ng/L	89	76.5	123.4			
WG350590CCB3	CCB	09/04/13 18:49				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.02006		.02002	mg/L	99.8	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0015	0.0015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05		.04542	mg/L	90.8	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05	.0046	.05519	mg/L	101.2	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05	.0046	.05426	mg/L	99.3	70	130	1.7	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.02006		.02057	mg/L	102.5	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0015	0.0015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.0011	0.0011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05		.05082	mg/L	101.6	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.0011	0.0011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05		.05121	mg/L	102.4	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05	U	.05111	mg/L	102.2	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05	U	.05054	mg/L	101.1	70	130	1.12	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.0511	mg/L	102.2	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0018	0.0018			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04838	mg/L	96.7	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	U	.04764	mg/L	95.2	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	U	.047	mg/L	93.9	70	130	1.35	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05082	mg/L	101.6	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0018	0.0018			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00132	0.00132			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04808	mg/L	96.1	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00132	0.00132			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.04874	mg/L	97.4	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	U	.04647	mg/L	92.8	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	U	.04586	mg/L	91.6	70	130	1.32	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349617													
WG349617ICV	ICV	08/17/13 14:27	WI130712-3	2.416		2.431	mg/L	100.6	90	110			
WG349617ICB	ICB	08/17/13 14:28				U	mg/L		-0.06	0.06			
WG349619													
WG349619LFB	LFB	08/17/13 15:20	WI130816-3	2		1.906	mg/L	95.3	90	110			
L13763-02DUP	DUP	08/17/13 15:25			U	U	mg/L				0	20	RA
L13763-01AS	AS	08/17/13 15:56	WI130816-3	2	.03	1.917	mg/L	94.4	90	110			

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ACZ Project ID: ***L13763***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349472													
WG349472ICV	ICV	08/15/13 11:22	WI121105-5	1.003		1.047	mg/L	104.4	90	110			
WG349472ICB	ICB	08/15/13 11:25				U	mg/L		-0.15	0.15			
WG349472LFB1	LFB	08/15/13 11:49	WI121218-3	1		1.041	mg/L	104.1	90	110			
WG349472LFB2	LFB	08/15/13 11:59	WI121218-3	1		.978	mg/L	97.8	90	110			
L13734-02AS	AS	08/15/13 12:01	WI121218-3	1	.85	1.778	mg/L	92.8	90	110			
L13734-03DUP	DUP	08/15/13 12:05			.78	.733	mg/L				6.2	20	

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349414													
WG349414LCSW3	LCSW	08/14/13 12:53	PCN41777	6		6.01	units	100.2	98	102			
L13765-04DUP	DUP	08/14/13 15:39			7.9	7.91	units				0.1	20	
WG349414LCSW6	LCSW	08/14/13 15:52	PCN41777	6		6.04	units	100.7	98	102			
WG349414LCSW9	LCSW	08/14/13 19:03	PCN41777	6		6.04	units	100.7	98	102			
WG349414LCSW12	LCSW	08/14/13 22:45	PCN41777	6		6.05	units	100.8	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349534													
WG349534ICV	ICV	08/15/13 22:45	WI130725-8	.65228		.643	mg/L	98.6	90	110			
WG349534ICB	ICB	08/15/13 22:48				U	mg/L		-0.03	0.03			
WG349508LRB	LRB	08/15/13 22:49				U	mg/L		-0.03	0.03			
WG349508LFB	LFB	08/15/13 22:50	WI130806-6	.5		.48	mg/L	96	90	110			
L13725-02LFM	LFM	08/15/13 23:08	WI130806-6	.5	.04	.531	mg/L	98.2	90	110			
L13725-03DUP	DUP	08/15/13 23:11			.02	.016	mg/L				22.2	20	RA
WG349536													
WG349509LRB	LRB	08/15/13 23:35				U	mg/L		-0.03	0.03			
WG349509LFB	LFB	08/15/13 23:36	WI130806-6	.5		.486	mg/L	97.2	90	110			
L13763-03LFM	LFM	08/15/13 23:38	WI130806-6	.5	.01	.486	mg/L	95.2	90	110			
L13763-04DUP	DUP	08/15/13 23:40			.02	.016	mg/L				22.2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	20		19.94	mg/L	99.7	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.9	0.9			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	99.96112		102.3	mg/L	102.3	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	99.96112	.5	103.2	mg/L	102.7	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	99.96112	.5	102.6	mg/L	102.1	85	115	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	20		19.76	mg/L	98.8	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.9	0.9			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.66	0.66			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	99.96112		99.44	mg/L	99.5	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	99.96112	.7	101	mg/L	100.3	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	99.96112	.7	100.9	mg/L	100.2	70	130	0.1	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349254													
WG349254PBW	PBW	08/12/13 11:30				U	mg/L		-15	15			
WG349254LCSW	LCSW	08/12/13 11:31	PCN42844	160		151	mg/L	94.4	80	120			
L13783-02DUP	DUP	08/12/13 11:59			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.93	mg/L	96.5	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.3	0.3			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1.0009		.95	mg/L	94.9	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1.0009	U	.96	mg/L	95.9	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1.0009	U	.96	mg/L	95.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.96	mg/L	98	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.3	0.3			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.22	0.22			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1.0009		1.01	mg/L	100.9	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1.0009	U	1.02	mg/L	101.9	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1.0009	U	1.01	mg/L	100.9	70	130	0.99	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05117	mg/L	102.3	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04923	mg/L	98.4	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	.0044	.05896	mg/L	109	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	.0044	.05898	mg/L	109.1	70	130	0.03	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04878	mg/L	97.6	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04857	mg/L	97	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.04678	mg/L	93.5	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	U	.0473	mg/L	94.5	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	U	.04709	mg/L	94.1	70	130	0.44	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.02002		.02022	mg/L	101	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.00015	0.00015			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.01001		.009148	mg/L	91.4	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.01001	U	.00945	mg/L	94.4	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.01001	U	.009255	mg/L	92.5	70	130	2.09	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.02002		.02086	mg/L	104.2	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.00015	0.00015			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00011	0.00011			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.01001		.01015	mg/L	101.4	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00011	0.00011			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.01001		.01022	mg/L	102.1	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.01001	U	.009902	mg/L	98.9	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.01001	U	.009872	mg/L	98.6	70	130	0.3	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	100		100.42	mg/L	100.4	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.9	0.9			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	100.0495		102.1	mg/L	102	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	100.0495	151	248.3	mg/L	97.3	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	100.0495	151	246.3	mg/L	95.3	85	115	0.81	20	

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ACZ Project ID: ***L13763***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	100		99.06	mg/L	99.1	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.9	0.9			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.66	0.66			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	100.0495		98.76	mg/L	98.7	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	100.0495	152	248.8	mg/L	96.8	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	100.0495	152	251.2	mg/L	99.2	70	130	0.96	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.988	mg/L	99.4	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.03	0.03			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	.5		.502	mg/L	100.4	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	.5	.02	.522	mg/L	100.4	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	.5	.02	.519	mg/L	99.8	85	115	0.58	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		2.003	mg/L	100.2	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.03	0.03			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.022	0.022			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	.5		.492	mg/L	98.4	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	.5	.03	.522	mg/L	98.4	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	.5	.03	.522	mg/L	98.4	70	130	0	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05348	mg/L	107	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04807	mg/L	96	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	U	.05136	mg/L	102.6	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	U	.05071	mg/L	101.3	70	130	1.27	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05274	mg/L	105.5	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.04909	mg/L	98.1	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.04969	mg/L	99.3	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	U	.04902	mg/L	97.9	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	U	.04927	mg/L	98.4	70	130	0.51	20	

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ACZ Project ID: ***L13763***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05015		.0512	mg/L	102.1	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05005		.04631	mg/L	92.5	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05005	U	.0458	mg/L	91.5	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05005	U	.04981	mg/L	99.5	70	130	8.39	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05015		.05347	mg/L	106.6	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05005		.05162	mg/L	103.1	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05005		.05251	mg/L	104.9	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05005	U	.05612	mg/L	112.1	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05005	U	.05088	mg/L	101.7	70	130	9.79	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.9418	mg/L	97.1	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.015	0.015			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	1		.9887	mg/L	98.9	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	1	U	1.005	mg/L	100.5	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	1	U	.9934	mg/L	99.3	85	115	1.16	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.9698	mg/L	98.5	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.015	0.015			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.011	0.011			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	1		.9961	mg/L	99.6	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	1	.007	1.017	mg/L	101	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	1	.007	1.019	mg/L	101.2	70	130	0.2	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.05265	mg/L	105.3	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0003	0.0003			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.05		.04795	mg/L	95.9	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.05	.0022	.05462	mg/L	104.8	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.05	.0022	.05484	mg/L	105.3	70	130	0.4	20	

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ACZ Project ID: ***L13763***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.05137	mg/L	102.7	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0003	0.0003			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00022	0.00022			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.05		.04906	mg/L	98.1	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00022	0.00022			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.05		.05046	mg/L	100.9	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.05	.0002	.05004	mg/L	99.7	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.05	.0002	.05054	mg/L	100.7	70	130	0.99	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349527													
WG349527ICV	ICV	08/16/13 5:06	MS130717-9	.05		.04971	mg/L	99.4	90	110			
WG349527ICB	ICB	08/16/13 5:10				U	mg/L		-0.0006	0.0006			
WG349527LFB	LFB	08/16/13 5:13	MS130717-1	.0501		.04928	mg/L	98.4	85	115			
L13763-03AS	AS	08/16/13 5:34	MS130717-1	.0501	.0101	.06209	mg/L	103.8	70	130			
L13763-03ASD	ASD	08/16/13 5:38	MS130717-1	.0501	.0101	.06109	mg/L	101.8	70	130	1.62	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349740													
WG349740ICV	ICV	08/20/13 15:22	MS130717-9	.05		.04784	mg/L	95.7	90	110			
WG349740ICB	ICB	08/20/13 15:25				U	mg/L		-0.0006	0.0006			
WG349540LRB	LRB	08/20/13 15:28				U	mg/L		-0.00044	0.00044			
WG349540LFB	LFB	08/20/13 15:32	MS130816-3	.0501		.04779	mg/L	95.4	85	115			
WG349677LRB	LRB	08/20/13 15:55				U	mg/L		-0.00044	0.00044			
WG349677LFB	LFB	08/20/13 16:04	MS130816-3	.0501		.04893	mg/L	97.7	85	115			
L13765-04LFM	LFM	08/20/13 16:43	MS130816-3	.0501	U	.04737	mg/L	94.6	70	130			
L13765-04LFMD	LFMD	08/20/13 16:46	MS130816-3	.0501	U	.0471	mg/L	94	70	130	0.57	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349287													
WG349287ICV	ICV	08/12/13 19:05	II130729-1	2		1.9	mg/L	95	95	105			
WG349287ICB	ICB	08/12/13 19:11				U	mg/L		-0.03	0.03			
WG349287LFB	LFB	08/12/13 19:23	II130716-5	.5		.499	mg/L	99.8	85	115			
L13763-02AS	AS	08/12/13 19:36	II130716-5	.5	U	.509	mg/L	101.8	85	115			
L13763-02ASD	ASD	08/12/13 19:39	II130716-5	.5	U	.507	mg/L	101.4	85	115	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L13763***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349566													
WG349566ICV	ICV	08/16/13 22:29	II130716-1	2		1.933	mg/L	96.7	95	105			
WG349566ICB	ICB	08/16/13 22:35				U	mg/L		-0.03	0.03			
WG349506LRB	LRB	08/16/13 22:47				U	mg/L		-0.022	0.022			
WG349506LFB	LFB	08/16/13 22:50	II130716-5	.5		.507	mg/L	101.4	85	115			
L13763-02LFM	LFM	08/16/13 23:00	II130716-5	.5	U	.512	mg/L	102.4	70	130			
L13763-02LFMD	LFMD	08/16/13 23:03	II130716-5	.5	U	.507	mg/L	101.4	70	130	0.98	20	

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ACZ Project ID: ***L13763***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13763-01	WG349566	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349740	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350322	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349573	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349378	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349605	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349619	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349472	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349534	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349254	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering

ACZ Project ID: ***L13763***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13763-02	WG349566	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349740	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350322	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349573	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349378	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349605	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349619	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349472	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349534	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349254	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13763***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13763-03	WG349566	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349740	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350322	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349573	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349378	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349605	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349619	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349472	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349536	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349254	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13763***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13763-04	WG349566	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349740	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350322	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349573	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349378	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349605	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349619	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349472	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349536	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349254	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13763***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13763-05	WG349566	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349740	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350322	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349573	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349606	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349605	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349619	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349472	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349536	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349254	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349573	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13763
Date Received: 08/09/2013 10:00
Received By: mtb
Date Printed: 8/9/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the analyses requested section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2533	12.6	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13763

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe, Jasin Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2013 - GW	mercury transfer blank analysis
PW-4	8/6/13 11:30		7	X	
GW-4	8/6/13 12:25		7	X	
PW-1	8/6/13 14:50		7	X	
GW-1	8/6/13 15:35		7	X	
59761	8/6/13 16:30		7	X	
Transfer Blank	8/6/13 12:30		1	(89)	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	~~8:00~~ 8/7/13 8:00		8.9.13

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13763 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 05, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13796

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 12, 2013. This project has been assigned to ACZ's project number, L13796. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13796. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 05, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: GOVERNMENT CORRAL SP

ACZ Sample ID: ***L13796-01***
Date Sampled: *08/07/13 11:35*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 12:57	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/19/13 12:08	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 18:59	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/20/13 13:36	scp
Total Hot Plate Digestion	M200.2 ICP								08/19/13 14:10	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: GOVERNMENT CORRAL SP

ACZ Sample ID: ***L13796-01***
Date Sampled: *08/07/13 11:35*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/15/13 12:11	jjc
Aluminum, total	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	08/20/13 14:08	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/21/13 21:35	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/22/13 19:14	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0073			mg/L	0.0002	0.001	08/21/13 21:35	msh
Arsenic, total	M200.8 ICP-MS	1	0.0074			mg/L	0.0002	0.001	08/22/13 19:14	pmc
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	08/14/13 19:39	jjc
Barium, total	M200.7 ICP	1	0.030			mg/L	0.003	0.02	08/20/13 14:08	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 21:35	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:14	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/14/13 19:39	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:08	aeb
Boron, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	08/14/13 19:39	jjc
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	08/20/13 14:08	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:35	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:14	pmc
Calcium, dissolved	M200.7 ICP	1	47.8			mg/L	0.2	1	08/14/13 19:39	jjc
Calcium, total	M200.7 ICP	1	49.3			mg/L	0.2	1	08/20/13 14:08	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	08/21/13 21:35	msh
Chromium, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.002	08/22/13 19:14	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00082			mg/L	0.00005	0.0003	08/21/13 21:35	msh
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	08/22/13 19:14	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 21:35	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/22/13 19:14	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:39	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:08	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/14/13 19:39	jjc
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	08/20/13 14:08	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:35	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:14	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/14/13 19:39	jjc
Lithium, total	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	08/20/13 14:08	aeb
Magnesium, dissolved	M200.7 ICP	1	13.8			mg/L	0.2	1	08/14/13 19:39	jjc
Magnesium, total	M200.7 ICP	1	14.6			mg/L	0.2	1	08/20/13 14:08	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	08/21/13 21:35	msh
Manganese, total	M200.8 ICP-MS	1	0.0056			mg/L	0.0005	0.003	08/22/13 19:14	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/30/13 14:31	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/04/13 18:14	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	08/21/13 21:35	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	08/22/13 19:14	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/21/13 21:35	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/22/13 19:14	pmc
Potassium, dissolved	M200.7 ICP	1	4.0			mg/L	0.3	2	08/14/13 19:39	jjc

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: GOVERNMENT CORRAL SP

ACZ Sample ID: ***L13796-01***
Date Sampled: *08/07/13 11:35*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.4			mg/L	0.3	2	08/20/13 14:08	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:39	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:08	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	08/21/13 21:35	msh
Selenium, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	08/22/13 19:14	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 16:54	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:14	pmc
Sodium, dissolved	M200.7 ICP	1	17.8			mg/L	0.3	2	08/14/13 19:39	jjc
Sodium, total	M200.7 ICP	1	19.0			mg/L	0.3	2	08/20/13 14:08	aeb
Strontium, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	08/14/13 19:39	jjc
Strontium, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	08/20/13 14:08	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:35	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:14	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 21:35	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/22/13 19:14	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/14/13 19:39	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:08	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	08/21/13 21:35	msh
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	08/22/13 19:14	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0195			mg/L	0.0002	0.001	08/21/13 21:35	msh
Vanadium, total	M200.8 ICP-MS	1	0.0198			mg/L	0.0002	0.001	08/22/13 19:14	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/14/13 19:39	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:08	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	161		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	161		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	437		*	umhos/cm	1	10	08/14/13 21:16	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:48	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:04	mpb
Hardness as CaCO3	SM2340B - Calculation		176			mg/L	1	7	09/05/13 12:09	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.25		*	mg/L	0.02	0.1	08/22/13 23:51	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/22/13 14:54	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	08/21/13 1:07	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 12:24	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L13796-02***
Date Sampled: *08/07/13 14:45*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 13:06	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/19/13 12:12	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 19:04	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/20/13 13:48	scp
Total Hot Plate Digestion	M200.2 ICP								08/19/13 14:45	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L13796-02***
Date Sampled: *08/07/13 14:45*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/15/13 12:26	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/20/13 14:17	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/21/13 21:38	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/22/13 19:17	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0043			mg/L	0.0002	0.001	08/21/13 21:38	msh
Arsenic, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0002	0.001	08/22/13 19:17	pmc
Barium, dissolved	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	08/14/13 19:48	jjc
Barium, total	M200.7 ICP	1	0.015	B		mg/L	0.003	0.02	08/20/13 14:17	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 21:38	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:17	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/14/13 19:48	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:17	aeb
Boron, dissolved	M200.7 ICP	1	0.21			mg/L	0.01	0.05	08/14/13 19:48	jjc
Boron, total	M200.7 ICP	1	0.22			mg/L	0.01	0.05	08/20/13 14:17	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:38	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:17	pmc
Calcium, dissolved	M200.7 ICP	1	2.9			mg/L	0.2	1	08/14/13 19:48	jjc
Calcium, total	M200.7 ICP	1	2.9			mg/L	0.2	1	08/20/13 14:17	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/13 21:38	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/22/13 19:17	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	08/21/13 21:38	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	08/22/13 19:17	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 21:38	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/22/13 19:17	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:48	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:17	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/14/13 19:48	jjc
Iron, total	M200.7 ICP	1	0.05			mg/L	0.02	0.05	08/20/13 14:17	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/21/13 21:38	msh
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/22/13 19:17	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/14/13 19:48	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/20/13 14:17	aeb
Magnesium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.2	1	08/14/13 19:48	jjc
Magnesium, total	M200.7 ICP	1	0.6	B		mg/L	0.2	1	08/20/13 14:17	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0075			mg/L	0.0005	0.003	08/21/13 21:38	msh
Manganese, total	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	08/22/13 19:17	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	08/30/13 14:38	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.7	B	*	ng/L	0.4	1	09/04/13 18:21	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0088			mg/L	0.0005	0.003	08/21/13 21:38	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0094			mg/L	0.0005	0.003	08/22/13 19:17	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/21/13 21:38	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/22/13 19:17	pmc
Potassium, dissolved	M200.7 ICP	1	3.8			mg/L	0.3	2	08/14/13 19:48	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP

ACZ Sample ID: ***L13796-02***
Date Sampled: *08/07/13 14:45*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	08/20/13 14:17	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:48	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:17	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/21/13 21:38	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/22/13 19:17	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 16:58	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:17	pmc
Sodium, dissolved	M200.7 ICP	1	77.6			mg/L	0.3	2	08/14/13 19:48	jjc
Sodium, total	M200.7 ICP	1	81.9			mg/L	0.3	2	08/20/13 14:17	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/14/13 19:48	jjc
Strontium, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/20/13 14:17	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:38	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:17	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 21:38	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/22/13 19:17	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/14/13 19:48	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:17	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/21/13 21:38	msh
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	08/22/13 19:17	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0012			mg/L	0.0002	0.001	08/21/13 21:38	msh
Vanadium, total	M200.8 ICP-MS	1	0.0012			mg/L	0.0002	0.001	08/22/13 19:17	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/14/13 19:48	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:17	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	147		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1	5	B	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	152		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	384		*	umhos/cm	1	10	08/14/13 21:25	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:49	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:06	mpb
Hardness as CaCO3	SM2340B - Calculation		9			mg/L	1	7	09/05/13 12:09	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B	*	mg/L	0.02	0.1	08/22/13 23:53	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.12	B	*	mg/L	0.05	0.5	08/22/13 13:55	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.13		*	mg/L	0.01	0.05	08/21/13 1:08	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 12:26	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP DUPLICATE

ACZ Sample ID: ***L13796-03***
Date Sampled: *08/07/13 14:55*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 13:15	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/19/13 12:15	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 19:10	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/28/13 16:26	pmc
Total Hot Plate Digestion	M200.2 ICP								08/19/13 14:57	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP DUPLICATE

ACZ Sample ID: ***L13796-03***
Date Sampled: *08/07/13 14:55*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/15/13 12:29	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/20/13 14:20	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/21/13 21:41	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/22/13 19:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0002	0.001	08/21/13 21:41	msh
Arsenic, total	M200.8 ICP-MS	1	0.0044			mg/L	0.0002	0.001	08/29/13 19:28	pmc
Barium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.003	0.02	08/14/13 19:51	jjc
Barium, total	M200.7 ICP	1	0.014	B		mg/L	0.003	0.02	08/20/13 14:20	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 21:41	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:20	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/14/13 19:51	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:20	aeb
Boron, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/14/13 19:51	jjc
Boron, total	M200.7 ICP	1	0.22			mg/L	0.01	0.05	08/20/13 14:20	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:41	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:20	pmc
Calcium, dissolved	M200.7 ICP	1	3.2			mg/L	0.2	1	08/14/13 19:51	jjc
Calcium, total	M200.7 ICP	1	2.7			mg/L	0.2	1	08/20/13 14:20	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/13 21:41	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/22/13 19:20	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00035			mg/L	0.00005	0.0003	08/21/13 21:41	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	08/22/13 19:20	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 21:41	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/22/13 19:20	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:51	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:20	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/14/13 19:51	jjc
Iron, total	M200.7 ICP	1	0.07			mg/L	0.02	0.05	08/20/13 14:20	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/21/13 21:41	msh
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/22/13 19:20	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/14/13 19:51	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/20/13 14:20	aeb
Magnesium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	08/14/13 19:51	jjc
Magnesium, total	M200.7 ICP	1	0.6	B		mg/L	0.2	1	08/20/13 14:20	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0076			mg/L	0.0005	0.003	08/21/13 21:41	msh
Manganese, total	M200.8 ICP-MS	1	0.0089			mg/L	0.0005	0.003	08/22/13 19:20	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	08/30/13 14:45	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.6	B	*	ng/L	0.4	1	09/04/13 18:28	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	08/21/13 21:41	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0092			mg/L	0.0005	0.003	08/22/13 19:20	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/21/13 21:41	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/22/13 19:20	pmc
Potassium, dissolved	M200.7 ICP	1	3.8			mg/L	0.3	2	08/14/13 19:51	jjc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BISHOP DUPLICATE

ACZ Sample ID: ***L13796-03***
Date Sampled: *08/07/13 14:55*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	08/20/13 14:20	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 19:51	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:20	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0003	08/21/13 21:41	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/22/13 19:20	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 17:01	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:20	pmc
Sodium, dissolved	M200.7 ICP	1	77.5			mg/L	0.3	2	08/14/13 19:51	jjc
Sodium, total	M200.7 ICP	1	81.4			mg/L	0.3	2	08/20/13 14:20	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/14/13 19:51	jjc
Strontium, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/20/13 14:20	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:41	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:20	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 21:41	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/22/13 19:20	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/14/13 19:51	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:20	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/21/13 21:41	msh
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	08/22/13 19:20	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0014			mg/L	0.0002	0.001	08/21/13 21:41	msh
Vanadium, total	M200.8 ICP-MS	1	0.0011			mg/L	0.0002	0.001	08/22/13 19:20	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/14/13 19:51	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:20	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	164		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1	6	B	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	170		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	380		*	umhos/cm	1	10	08/14/13 21:34	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:50	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:07	mpb
Hardness as CaCO3	SM2340B - Calculation		11			mg/L	1	7	09/05/13 12:09	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.08	B	*	mg/L	0.02	0.1	08/22/13 23:56	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.13	B	*	mg/L	0.05	0.5	08/22/13 13:56	bsu
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.13		*	mg/L	0.01	0.05	08/21/13 1:09	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 12:27	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L13796-04***
Date Sampled: *08/07/13 17:00*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 13:23	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/19/13 12:19	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 19:15	bsu
Total Hot Plate Digestion	M200.2 ICP								08/19/13 15:09	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/20/13 14:12	scp

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L13796-04***
Date Sampled: *08/07/13 17:00*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/15/13 12:32	jjc
Aluminum, total	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	08/20/13 14:23	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	08/21/13 21:45	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	08/22/13 19:23	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0643			mg/L	0.0002	0.001	08/22/13 17:05	msh
Arsenic, total	M200.8 ICP-MS	1	0.0600			mg/L	0.0002	0.001	08/22/13 19:23	pmc
Barium, dissolved	M200.7 ICP	1	0.022			mg/L	0.003	0.02	08/14/13 20:00	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	08/20/13 14:23	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 21:45	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:23	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/14/13 20:00	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:23	aeb
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	08/14/13 20:00	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	08/20/13 14:23	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:45	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:23	pmc
Calcium, dissolved	M200.7 ICP	1	56.4			mg/L	0.2	1	08/14/13 20:00	jjc
Calcium, total	M200.7 ICP	1	58.6			mg/L	0.2	1	08/20/13 14:23	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/13 21:45	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/22/13 19:23	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00036			mg/L	0.00005	0.0003	08/21/13 21:45	msh
Cobalt, total	M200.8 ICP-MS	1	0.00024	B		mg/L	0.00005	0.0003	08/22/13 19:23	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 21:45	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/22/13 19:23	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 20:00	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:23	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/14/13 20:00	jjc
Iron, total	M200.7 ICP	1	0.05			mg/L	0.02	0.05	08/20/13 14:23	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:45	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/22/13 19:23	pmc
Lithium, dissolved	M200.7 ICP	1	0.19			mg/L	0.02	0.1	08/14/13 20:00	jjc
Lithium, total	M200.7 ICP	1	0.20			mg/L	0.02	0.1	08/20/13 14:23	aeb
Magnesium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	08/14/13 20:00	jjc
Magnesium, total	M200.7 ICP	1	6.3			mg/L	0.2	1	08/20/13 14:23	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.1098			mg/L	0.0005	0.003	08/21/13 21:45	msh
Manganese, total	M200.8 ICP-MS	1	0.1179			mg/L	0.0005	0.003	08/22/13 19:23	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	08/30/13 14:52	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.8	B	*	ng/L	0.4	1	09/04/13 18:35	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0109			mg/L	0.0005	0.003	08/21/13 21:45	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0005	0.003	08/22/13 19:23	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	08/21/13 21:45	msh
Nickel, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	08/22/13 19:23	pmc
Potassium, dissolved	M200.7 ICP	1	25.3			mg/L	0.3	2	08/14/13 20:00	jjc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59763

ACZ Sample ID: ***L13796-04***
Date Sampled: *08/07/13 17:00*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	27.4			mg/L	0.3	2	08/20/13 14:23	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/14/13 20:00	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:23	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	08/21/13 21:45	msh
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	08/22/13 19:23	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 17:05	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 19:23	pmc
Sodium, dissolved	M200.7 ICP	1	288			mg/L	0.3	2	08/14/13 20:00	jjc
Sodium, total	M200.7 ICP	1	306			mg/L	0.3	2	08/20/13 14:23	aeb
Strontium, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	08/14/13 20:00	jjc
Strontium, total	M200.7 ICP	1	0.19			mg/L	0.01	0.05	08/20/13 14:23	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 21:45	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/22/13 19:23	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 21:45	msh
Tin, total	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	08/22/13 19:23	pmc
Titanium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	08/15/13 12:32	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:23	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	08/21/13 21:45	msh
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	08/22/13 19:23	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0023			mg/L	0.0002	0.001	08/21/13 21:45	msh
Vanadium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0002	0.001	08/22/13 19:23	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/14/13 20:00	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:23	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	189		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	189		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	1740		*	umhos/cm	1	10	08/14/13 21:43	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:51	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:08	mpb
Hardness as CaCO3	SM2340B - Calculation		165			mg/L	1	7	09/05/13 12:10	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.02	B	*	mg/L	0.02	0.1	08/22/13 23:57	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/22/13 13:57	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/14/13 0:00	dcw
pH measured at		1	21.0		*	C	0.1	0.1	08/14/13 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	08/21/13 1:10	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/12/13 12:28	abm

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13796***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738PBW1	PBW	08/20/13 15:48				13.5	mg/L		-20	20			
WG349738LCSW2	LCSW	08/20/13 16:01	WC130806-	820.0001		743.5	mg/L	90.7	90	110			
L13804-01DUP	DUP	08/20/13 17:47			82	81.1	mg/L				1.1	20	
WG349738LCSW5	LCSW	08/20/13 19:25	WC130806-	820.0001		777	mg/L	94.8	90	110			
WG349738PBW2	PBW	08/20/13 19:33				3.3	mg/L		-20	20			
WG349738LCSW8	LCSW	08/20/13 22:29	WC130806-	820.0001		769.1	mg/L	93.8	90	110			
WG349738PBW3	PBW	08/20/13 22:37				U	mg/L		-20	20			
WG349738LCSW11	LCSW	08/21/13 1:54	WC130806-	820.0001		785	mg/L	95.7	90	110			
WG349738PBW4	PBW	08/21/13 2:03				4.4	mg/L		-20	20			
WG349738LCSW14	LCSW	08/21/13 5:13	WC130806-	820.0001		783.7	mg/L	95.6	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349478													
WG349478ICV	ICV	08/15/13 11:30	II130729-1	2		2.003	mg/L	100.2	95	105			
WG349478ICB	ICB	08/15/13 11:36				U	mg/L		-0.09	0.09			
WG349478LFB	LFB	08/15/13 11:49	II130716-5	1.0011		1.061	mg/L	106	85	115			
L13796-01AS	AS	08/15/13 12:14	II130716-5	1.0011	U	1.005	mg/L	100.4	85	115			
L13796-01ASD	ASD	08/15/13 12:17	II130716-5	1.0011	U	1.064	mg/L	106.3	85	115	5.7	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.021	mg/L	101.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.09	0.09			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.066	0.066			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0011		1.016	mg/L	101.5	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1.0011	.04	1.08	mg/L	103.9	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1.0011	.04	1.059	mg/L	101.8	70	130	1.96	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.02		.01955	mg/L	97.8	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0012	0.0012			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.01		.00902	mg/L	90.2	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.01	U	.00849	mg/L	84.9	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.01	U	.00971	mg/L	97.1	70	130	13.41	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.02		.02096	mg/L	104.8	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0012	0.0012			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00088	0.00088			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.01		.01058	mg/L	105.8	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.01	.002	.01293	mg/L	109.3	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.01	.002	.01308	mg/L	110.8	70	130	1.15	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.04954	mg/L	99.1	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0006	0.0006			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.04894	mg/L	97.8	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.0007	.05454	mg/L	107.6	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.0007	.05549	mg/L	109.5	70	130	1.73	20	
WG349865													
WG349865ICV	ICV	08/22/13 16:44	MS130717-9	.05		.05344	mg/L	106.9	90	110			
WG349865ICB	ICB	08/22/13 16:48				U	mg/L		-0.0006	0.0006			
WG349865LFB	LFB	08/22/13 16:51	MS130816-3	.05005		.05139	mg/L	102.7	85	115			
L13811-04AS	AS	08/22/13 17:28	MS130816-3	1.001	2.88	3.936	mg/L	105.5	70	130			
L13811-04ASD	ASD	08/22/13 17:31	MS130816-3	1.001	2.88	3.874	mg/L	99.3	70	130	1.59	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05261	mg/L	105.2	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0006	0.0006			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00044	0.00044			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.05123	mg/L	102.4	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0032	.05686	mg/L	107.2	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0032	.05702	mg/L	107.5	70	130	0.28	20	
WG350345													
WG350345ICV	ICV	08/29/13 19:15	MS130717-9	.05		.05187	mg/L	103.7	90	110			
WG350345ICB	ICB	08/29/13 19:19				U	mg/L		-0.0006	0.0006			
WG350171LRB	LRB	08/29/13 19:22				U	mg/L		-0.00044	0.00044			
WG350171LFB	LFB	08/29/13 19:25	MS130816-3	.05005		.05418	mg/L	108.3	85	115			
L14010-01LFM	LFM	08/29/13 19:35	MS130816-3	.05005	.0008	.05562	mg/L	109.5	70	130			
L14010-01LFMD	LFMD	08/29/13 19:38	MS130816-3	.05005	.0008	.05338	mg/L	105.1	70	130	4.11	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.9698	mg/L	98.5	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.009	0.009			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	.5		.475	mg/L	95	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	.5	.024	.5012	mg/L	95.4	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	.5	.024	.5028	mg/L	95.8	85	115	0.32	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.9818	mg/L	99.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.009	0.009			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.0066	0.0066			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.479	mg/L	95.8	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	.5	.03	.5132	mg/L	96.6	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	.5	.03	.5134	mg/L	96.7	70	130	0.04	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.04766	mg/L	95.3	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.00015	0.00015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.0501		.04867	mg/L	97.1	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.0501	U	.05103	mg/L	101.9	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.0501	U	.05134	mg/L	102.5	70	130	0.61	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04747	mg/L	94.9	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.00015	0.00015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00011	0.00011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.0501		.04616	mg/L	92.1	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.0501	U	.04739	mg/L	94.6	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.0501	U	.04768	mg/L	95.2	70	130	0.61	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.985	mg/L	99.3	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.12	0.12			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1		.962	mg/L	96.2	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1	U	.96	mg/L	96	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1	U	.936	mg/L	93.6	85	115	2.53	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.025	mg/L	101.3	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.12	0.12			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.088	0.088			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		1.002	mg/L	100.2	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1	U	1.01	mg/L	101	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1	U	1.005	mg/L	100.5	70	130	0.5	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.991	mg/L	99.6	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.03	0.03			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	.5005		.487	mg/L	97.3	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	.5005	.04	.531	mg/L	98.1	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	.5005	.04	.536	mg/L	99.1	85	115	0.94	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.002	mg/L	100.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5005		.495	mg/L	98.9	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	.5005	.05	.546	mg/L	99.1	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	.5005	.05	.546	mg/L	99.1	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.0492	mg/L	98.4	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.0501		.04843	mg/L	96.7	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.0501	.0002	.0489	mg/L	97.2	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.0501	.0002	.04912	mg/L	97.6	70	130	0.45	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05128	mg/L	102.6	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.0501		.04841	mg/L	96.6	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.0501	U	.04844	mg/L	96.7	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.0501	U	.04865	mg/L	97.1	70	130	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	100		100.73	mg/L	100.7	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.6	0.6			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	68.0028		69.33	mg/L	102	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	68.0028	47.8	111.7	mg/L	94	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	68.0028	47.8	115.4	mg/L	99.4	85	115	3.26	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		98.95	mg/L	99	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.6	0.6			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.44	0.44			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	68.0028		69.23	mg/L	101.8	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	68.0028	49.3	118.3	mg/L	101.5	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	68.0028	49.3	117.6	mg/L	100.4	70	130	0.59	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05037	mg/L	100.7	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0015	0.0015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05126	mg/L	102.4	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	U	.04803	mg/L	96	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	U	.04908	mg/L	98.1	70	130	2.16	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04872	mg/L	97.4	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0015	0.0015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.0011	0.0011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.0488	mg/L	97.5	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0005	.04781	mg/L	94.5	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0005	.04809	mg/L	95.1	70	130	0.58	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05125	mg/L	102.5	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.00015	0.00015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05144	mg/L	102.8	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.00085	.05048	mg/L	99.2	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.00085	.05057	mg/L	99.3	70	130	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04998	mg/L	100	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.00015	0.00015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00011	0.00011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04923	mg/L	98.4	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.00083	.04587	mg/L	90	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.00083	.04556	mg/L	89.4	70	130	0.68	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349414													
WG349414LCSW1	LCSW	08/14/13 12:42	PCN42819	1408.8		1465	µmhos/cm	104	90	110			
WG349414LCSW4	LCSW	08/14/13 15:40	PCN42819	1408.8		1463	µmhos/cm	103.8	90	110			
WG349414LCSW7	LCSW	08/14/13 18:50	PCN42819	1408.8		1448.7	µmhos/cm	102.8	90	110			
L13797-04DUP	DUP	08/14/13 22:29			2130	2140	µmhos/cm				0.5	20	
WG349414LCSW10	LCSW	08/14/13 22:31	PCN42819	1408.8		1431.4	µmhos/cm	101.6	90	110			
WG349414LCSW13	LCSW	08/15/13 1:48	PCN42819	1408.8		1421.2	µmhos/cm	100.9	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05219	mg/L	104.4	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0015	0.0015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05149	mg/L	102.9	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.0011	.04722	mg/L	92.1	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.0011	.04827	mg/L	94.2	70	130	2.2	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05034	mg/L	100.7	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0015	0.0015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.0011	0.0011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04912	mg/L	98.1	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0012	.04555	mg/L	88.6	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0012	.04596	mg/L	89.4	70	130	0.9	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349739													
WG349739ICV	ICV	08/20/13 14:44	WI130807-6	.3		.3004	mg/L	100.1	90	110			
WG349739ICB	ICB	08/20/13 14:45				U	mg/L		-0.003	0.003			
WG349746													
WG349649LRB	LRB	08/20/13 15:38				U	mg/L		-0.003	0.003			
WG349649LFB	LFB	08/20/13 15:39	WI130807-2	.2		.2088	mg/L	104.4	90	110			
L13792-01DUP	DUP	08/20/13 15:41			U	.0034	mg/L				200	20	RA
L13792-02LFM	LFM	08/20/13 15:43	WI130807-2	.2	U	.207	mg/L	103.5	90	110			
L13796-04DUP	DUP	08/20/13 15:52			U	U	mg/L				0	20	RA
L13811-01LFM	LFM	08/20/13 15:53	WI130807-2	.2	U	.192	mg/L	96	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349739													
WG349739ICV	ICV	08/20/13 14:44	WI130807-6	.3		.3004	mg/L	100.1	90	110			
WG349739ICB	ICB	08/20/13 14:45				U	mg/L		-0.003	0.003			
WG349613LRB	LRB	08/20/13 14:46				U	mg/L		-0.003	0.003			
WG349613LFB	LFB	08/20/13 14:47	WI130807-4	.2		.1844	mg/L	92.2	90	110			
L13766-03DUP	DUP	08/20/13 15:00			U	U	mg/L				0	20	RA
L13766-04LFM	LFM	08/20/13 15:02	WI130807-4	.2	U	.1691	mg/L	84.6	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		2.02	mg/L	101	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.3	0.3			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1		.96	mg/L	96	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1	U	.95	mg/L	95	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1	U	.98	mg/L	98	85	115	3.11	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.05	mg/L	102.5	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.3	0.3			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.22	0.22			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		1	mg/L	100	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1	U	1.01	mg/L	101	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1	U	.99	mg/L	99	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.972	mg/L	98.6	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.06	0.06			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1.0014		.971	mg/L	97	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1.0014	U	.972	mg/L	97.1	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1.0014	U	.973	mg/L	97.2	85	115	0.1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.989	mg/L	99.5	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.06	0.06			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.044	0.044			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0014		1.014	mg/L	101.3	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1.0014	.04	1.041	mg/L	100	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1.0014	.04	1.03	mg/L	98.9	70	130	1.06	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05332	mg/L	106.6	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05078	mg/L	101.5	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	U	.05102	mg/L	101.9	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	U	.05109	mg/L	102.1	70	130	0.14	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05244	mg/L	104.9	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04908	mg/L	98.1	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0002	.04987	mg/L	99.2	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0002	.04992	mg/L	99.3	70	130	0.1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.991	mg/L	99.6	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.06	0.06			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1		.942	mg/L	94.2	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1	U	.949	mg/L	94.9	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1	U	.952	mg/L	95.2	85	115	0.32	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.998	mg/L	99.9	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.06	0.06			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.044	0.044			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		.95	mg/L	95	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1	.02	.986	mg/L	96.6	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1	.02	.986	mg/L	96.6	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	100		99.01	mg/L	99	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.6	0.6			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	49.99752		48.34	mg/L	96.7	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	49.99752	13.8	59.26	mg/L	90.9	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	49.99752	13.8	61.64	mg/L	95.7	85	115	3.94	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		96.96	mg/L	97	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.6	0.6			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.44	0.44			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	49.99752		48.79	mg/L	97.6	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	49.99752	14.6	63.35	mg/L	97.5	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	49.99752	14.6	62.79	mg/L	96.4	70	130	0.89	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05045	mg/L	100.9	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0015	0.0015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05093	mg/L	101.8	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.0092	.0583	mg/L	98.1	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.0092	.05844	mg/L	98.4	70	130	0.24	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04952	mg/L	99	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0015	0.0015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.0011	0.0011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04888	mg/L	97.7	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0158	.06239	mg/L	93.1	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0158	.06284	mg/L	94	70	130	0.72	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350216													
WG350216ICV	ICV	08/29/13 12:32	HG130725-7	10		9.05	ng/L	90.5	79	121			
WG350216ICB	ICB	08/29/13 12:38				U	ng/L		-0.5	0.5			
WG350216ICV2	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350216ICB2	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322													
WG350322ICV	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350322ICB	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322PQV	PQV	08/30/13 9:58	HG130725-8	.5		.6	ng/L	120	70	130			
WG350322CCV1	CCV	08/30/13 12:52	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350322CCB1	CCB	08/30/13 12:59				U	ng/L		-0.5	0.5			
WG350322LFB	LFB	08/30/13 13:06	HG130725-9	2		1.85	ng/L	92.5	71	125			
L13593-01MS	MS	08/30/13 13:28	HG5XPREP	50	3	11.5	ng/L	85	71	125			
L13593-01MSD	MSD	08/30/13 13:35	HG5XPREP	50	3	11.9	ng/L	89	71	125	3.42	24	
WG350322CCV2	CCV	08/30/13 14:17	HG130725-7	10		9.58	ng/L	95.8	76.5	123.4			
WG350322CCB2	CCB	08/30/13 14:24				U	ng/L		-0.5	0.5			
L13796-04MS	MS	08/30/13 14:59	HG130725-9	2	.3	1.91	ng/L	80.5	71	125			
L13796-04MSD	MSD	08/30/13 15:06	HG130725-9	2	.3	1.84	ng/L	77	71	125	3.73	24	
WG350322CCV3	CCV	08/30/13 15:13	HG130725-7	10		8.82	ng/L	88.2	76.5	123.4			
WG350322CCB3	CCB	08/30/13 15:20				U	ng/L		-0.5	0.5			
WG350322CCV4	CCV	08/30/13 16:23	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350322CCB4	CCB	08/30/13 16:30				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350543													
WG350543ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350543ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350590													
WG350590ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350590ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350590PQV	PQV	09/04/13 13:01	HG130725-8	.5		.54	ng/L	108	70	130			
WG350590CCV1	CCV	09/04/13 16:35	HG130725-7	10		8.66	ng/L	86.6	76.5	123.4			
WG350590CCB1	CCB	09/04/13 16:42				U	ng/L		-0.5	0.5			
WG350590LFB	LFB	09/04/13 16:57	HG130725-9	2		1.51	ng/L	75.5	71	125			
L13763-01MS	MS	09/04/13 17:18	HG20XPRE	800	5	38.8	ng/L	84.5	71	125			
L13763-01MSD	MSD	09/04/13 17:25	HG20XPRE	800	5	41	ng/L	90	71	125	5.51	24	
WG350590CCV2	CCV	09/04/13 18:00	HG130725-7	10		9.07	ng/L	90.7	76.5	123.4			
WG350590CCB2	CCB	09/04/13 18:07				U	ng/L		-0.5	0.5			
WG350590CCV3	CCV	09/04/13 18:42	HG130725-7	10		8.9	ng/L	89	76.5	123.4			
WG350590CCB3	CCB	09/04/13 18:49				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L13796***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.02006		.01984	mg/L	98.9	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0015	0.0015			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05		.05121	mg/L	102.4	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05	.0014	.05331	mg/L	103.8	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05	.0014	.0535	mg/L	104.2	70	130	0.36	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.02006		.02045	mg/L	101.9	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0015	0.0015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.0011	0.0011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05		.04882	mg/L	97.6	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05	.0103	.06066	mg/L	100.7	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05	.0103	.06038	mg/L	100.2	70	130	0.46	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05211	mg/L	104.2	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0018	0.0018			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.0513	mg/L	102.5	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.0007	.04658	mg/L	91.7	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.0007	.04798	mg/L	94.5	70	130	2.96	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04998	mg/L	100	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0018	0.0018			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00132	0.00132			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04815	mg/L	96.2	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0011	.04536	mg/L	88.4	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0011	.04561	mg/L	88.9	70	130	0.55	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349914													
WG349914ICV	ICV	08/22/13 19:42	WI130712-3	2.416		2.381	mg/L	98.6	90	110			
WG349914ICB	ICB	08/22/13 19:43				U	mg/L		-0.06	0.06			
WG349922													
WG349922LFB	LFB	08/22/13 23:50	WI130816-3	2		1.872	mg/L	93.6	90	110			
L13796-01AS	AS	08/22/13 23:52	WI130816-3	2	.25	2.053	mg/L	90.2	90	110			
L13796-02DUP	DUP	08/22/13 23:54			.06	.06	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13796***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349863													
WG349863ICV	ICV	08/22/13 13:45	WI121105-5	1.003		1.074	mg/L	107.1	90	110			
WG349863ICB	ICB	08/22/13 13:48				U	mg/L		-0.15	0.15			
WG349863LFB1	LFB	08/22/13 13:49	WI121218-3	1		.986	mg/L	98.6	90	110			
WG349863LFB2	LFB	08/22/13 14:20	WI121218-3	1		1.02	mg/L	102	90	110			
L13790-04AS	AS	08/22/13 14:38	WI121218-3	100	78	186.3	mg/L	108.3	90	110			
L13790-05DUP	DUP	08/22/13 14:53			103	101.4	mg/L				1.6	20	

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349414													
WG349414LCSW3	LCSW	08/14/13 12:53	PCN41777	6		6.01	units	100.2	98	102			
WG349414LCSW6	LCSW	08/14/13 15:52	PCN41777	6		6.04	units	100.7	98	102			
WG349414LCSW9	LCSW	08/14/13 19:03	PCN41777	6		6.04	units	100.7	98	102			
L13797-04DUP	DUP	08/14/13 22:29			8.4	8.38	units				0.2	20	
WG349414LCSW12	LCSW	08/14/13 22:45	PCN41777	6		6.05	units	100.8	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349759													
WG349759ICV	ICV	08/21/13 0:48	WI130725-8	.65228		.637	mg/L	97.7	90	110			
WG349759ICB	ICB	08/21/13 0:51				U	mg/L		-0.03	0.03			
WG349600LRB	LRB	08/21/13 0:52				U	mg/L		-0.03	0.03			
WG349600LFB	LFB	08/21/13 0:53	WI130806-6	.5		.477	mg/L	95.4	90	110			
L13784-02LFM	LFM	08/21/13 0:55	WI130806-6	.5	.39	.865	mg/L	95	90	110			
L13784-03DUP	DUP	08/21/13 0:58			U	U	mg/L				0	20	RA
L13796-04LFM	LFM	08/21/13 1:11	WI130806-6	.5	.05	.517	mg/L	93.4	90	110			
L13797-01DUP	DUP	08/21/13 1:13			.08	.082	mg/L				2.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	20		20.02	mg/L	100.1	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.9	0.9			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	99.96112		98.33	mg/L	98.4	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	99.96112	4	95.85	mg/L	91.9	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	99.96112	4	101.1	mg/L	97.1	85	115	5.33	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	20		19.82	mg/L	99.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.9	0.9			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.66	0.66			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	99.96112		98.06	mg/L	98.1	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	99.96112	4.4	103.3	mg/L	98.9	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	99.96112	4.4	102.9	mg/L	98.5	70	130	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349255													
WG349255PBW	PBW	08/12/13 12:00				U	mg/L		-15	15			
WG349255LCSW	LCSW	08/12/13 12:01	PCN42844	160		165	mg/L	103.1	80	120			
L13796-04DUP	DUP	08/12/13 12:29			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.93	mg/L	96.5	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.3	0.3			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1.0009		.91	mg/L	90.9	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1.0009	U	.91	mg/L	90.9	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1.0009	U	.91	mg/L	90.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2	mg/L	100	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.3	0.3			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.22	0.22			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0009		1	mg/L	99.9	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05056	mg/L	101.1	90	110			
WG349806ICB	ICB	08/21/13 21:28				.00013	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05061	mg/L	101.1	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	.0003	.05222	mg/L	103.7	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	.0003	.05248	mg/L	104.3	70	130	0.5	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05091	mg/L	101.8	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04825	mg/L	96.4	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	.0017	.05176	mg/L	100	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	.0017	.05252	mg/L	101.5	70	130	1.46	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349865													
WG349865ICV	ICV	08/22/13 16:44	MS130717-9	.02002		.01793	mg/L	89.6	90	110			
WG349865ICB	ICB	08/22/13 16:48				U	mg/L		-0.00015	0.00015			
WG349865LFB	LFB	08/22/13 16:51	MS130816-3	.01001		.008499	mg/L	84.9	85	115			
L13811-04AS	AS	08/22/13 17:28	MS130816-3	.2002	U	.166	mg/L	82.9	70	130			
L13811-04ASD	ASD	08/22/13 17:31	MS130816-3	.2002	U	.1654	mg/L	82.6	70	130	0.36	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.02002		.02003	mg/L	100	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.00015	0.00015			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00011	0.00011			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.01001		.00947	mg/L	94.6	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.01001	U	.008942	mg/L	89.3	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.01001	U	.008911	mg/L	89	70	130	0.35	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	100		100.95	mg/L	101	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.9	0.9			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	100.0495		97.89	mg/L	97.8	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	100.0495	17.8	108.7	mg/L	90.9	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	100.0495	17.8	113.8	mg/L	96	85	115	4.58	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		98.73	mg/L	98.7	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.9	0.9			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.66	0.66			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	100.0495		97.31	mg/L	97.3	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	100.0495	19	117.3	mg/L	98.3	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	100.0495	19	117.2	mg/L	98.2	70	130	0.09	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.991	mg/L	99.6	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.03	0.03			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	.5		.478	mg/L	95.6	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	.5	.24	.676	mg/L	87.2	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	.5	.24	.7	mg/L	92	85	115	3.49	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.004	mg/L	100.2	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.483	mg/L	96.6	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	.5	.26	.743	mg/L	96.6	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	.5	.26	.742	mg/L	96.4	70	130	0.13	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05402	mg/L	108	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.05167	mg/L	103.2	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	U	.0531	mg/L	106.1	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	U	.05277	mg/L	105.4	70	130	0.62	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05359	mg/L	107.2	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.0497	mg/L	99.3	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	U	.05122	mg/L	102.3	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	U	.05109	mg/L	102.1	70	130	0.25	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05015		.05428	mg/L	108.2	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05005		.06878	mg/L	137.4	85	115			LA
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05005	U	.05029	mg/L	100.5	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05005	U	.05015	mg/L	100.2	70	130	0.28	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05015		.05272	mg/L	105.1	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05005		.04932	mg/L	98.5	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05005	U	.05075	mg/L	101.4	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05005	U	.05154	mg/L	103	70	130	1.54	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.9505	mg/L	97.5	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.015	0.015			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	1		.9514	mg/L	95.1	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	1	U	.9374	mg/L	93.7	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	1	U	.9391	mg/L	93.9	85	115	0.18	20	
WG349478													
WG349478ICV	ICV	08/15/13 11:30	II130729-1	2		1.9767	mg/L	98.8	95	105			
WG349478ICB	ICB	08/15/13 11:36				U	mg/L		-0.015	0.015			
WG349478LFB	LFB	08/15/13 11:49	II130716-5	1		1.01	mg/L	101	85	115			
L13796-01AS	AS	08/15/13 12:14	II130716-5	1	U	1.007	mg/L	100.7	85	115			
L13796-01ASD	ASD	08/15/13 12:17	II130716-5	1	U	1.001	mg/L	100.1	85	115	0.6	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.9715	mg/L	98.6	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.015	0.015			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.011	0.011			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		.9814	mg/L	98.1	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	1	U	.9868	mg/L	98.7	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	1	U	.9849	mg/L	98.5	70	130	0.19	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.05303	mg/L	106.1	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0003	0.0003			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.05		.05082	mg/L	101.6	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.05	.0013	.05563	mg/L	108.7	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.05	.0013	.05581	mg/L	109	70	130	0.32	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.05183	mg/L	103.7	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0003	0.0003			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00022	0.00022			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.05		.04944	mg/L	98.9	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.05	.0056	.05817	mg/L	105.1	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.05	.0056	.05854	mg/L	105.9	70	130	0.63	20	

SPF Water Engineering

ACZ Project ID: ***L13796***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349806													
WG349806ICV	ICV	08/21/13 21:25	MS130717-9	.05		.04968	mg/L	99.4	90	110			
WG349806ICB	ICB	08/21/13 21:28				U	mg/L		-0.0006	0.0006			
WG349806LFB	LFB	08/21/13 21:31	MS130717-1	.0501		.05157	mg/L	102.9	85	115			
L13806-02AS	AS	08/21/13 21:55	MS130717-1	.0501	.0006	.05086	mg/L	100.3	70	130			
L13806-02ASD	ASD	08/21/13 21:58	MS130717-1	.0501	.0006	.05223	mg/L	103.1	70	130	2.66	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349831													
WG349831ICV	ICV	08/22/13 18:58	MS130717-9	.05		.04848	mg/L	97	90	110			
WG349831ICB	ICB	08/22/13 19:01				U	mg/L		-0.0006	0.0006			
WG349707LRB	LRB	08/22/13 19:04				U	mg/L		-0.00044	0.00044			
WG349707LFB	LFB	08/22/13 19:07	MS130816-3	.0501		.04942	mg/L	98.6	85	115			
L13822-02LFM	LFM	08/22/13 19:39	MS130816-3	.0501	.0018	.05223	mg/L	100.7	70	130			
L13822-02LFMD	LFMD	08/22/13 19:43	MS130816-3	.0501	.0018	.05285	mg/L	101.9	70	130	1.18	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349351													
WG349351ICV	ICV	08/14/13 18:28	II130729-1	2		1.974	mg/L	98.7	95	105			
WG349351ICB	ICB	08/14/13 18:34				U	mg/L		-0.03	0.03			
WG349351LFB	LFB	08/14/13 18:46	II130716-5	.5		.489	mg/L	97.8	85	115			
L13796-01AS	AS	08/14/13 19:42	II130716-5	.5	U	.465	mg/L	93	85	115			
L13796-01ASD	ASD	08/14/13 19:45	II130716-5	.5	U	.495	mg/L	99	85	115	6.25	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.941	mg/L	97.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.505	mg/L	101	85	115			
L13796-01LFM	LFM	08/20/13 14:11	II130816-3	.5	U	.498	mg/L	99.6	70	130			
L13796-01LFMD	LFMD	08/20/13 14:14	II130816-3	.5	U	.495	mg/L	99	70	130	0.6	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13796***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13796-01	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349806	Tin, dissolved	M200.8 ICP-MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349739	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349863	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349255	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13796***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13796-02	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349806	Tin, dissolved	M200.8 ICP-MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349739	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349863	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349255	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13796***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13796-03	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349806	Tin, dissolved	M200.8 ICP-MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349739	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349863	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349255	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13796***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13796-04	WG350590	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349806	Tin, dissolved	M200.8 ICP-MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349414	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349739	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349863	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349414	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349255	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13796
Date Received: 08/12/2013 10:09
Received By: mtb
Date Printed: 8/12/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3766	14.7	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13796

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe / Jason Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SPF-2013-GW
Government Canal Spring	8/7/13 11:35		7	X
Bishop	8/7/13 14:45		7	X
Bishop Duplicate	8/7/13 14:55		7	X
59763	8/7/13 17:00		7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.
w/addition of Nitrate + Nitrite analysis on YELLOW bottle.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/8/13 8:00		
		WPC 8-12-13 10:09	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13796 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 28, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13800

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 12, 2013. This project has been assigned to ACZ's project number, L13800. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13800. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 27, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: 59766

ACZ Sample ID: ***L13800-01***
Date Sampled: *08/08/13 08:52*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	12.9		*	mg/L	0.5	2.5	08/20/13 14:10	tcd
Fluoride	M300.0 - Ion Chromatography	1	1.78		*	mg/L	0.1	0.5	08/20/13 14:10	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.04	BH		mg/L	0.02	0.1	08/28/13 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.04	BH	*	mg/L	0.02	0.1	08/14/13 19:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/14/13 19:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	674		*	mg/L	10	20	08/14/13 15:41	khw
Sulfate	M300.0 - Ion Chromatography	10	307		*	mg/L	5	25	08/21/13 12:18	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L13800-02***
Date Sampled: *08/08/13 10:55*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	11.2		*	mg/L	0.5	2.5	08/20/13 14:27	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.47	B	*	mg/L	0.1	0.5	08/20/13 14:27	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.1	H		mg/L	0.02	0.1	08/28/13 9:37	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.10	H	*	mg/L	0.02	0.1	08/14/13 19:18	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/14/13 19:18	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	282		*	mg/L	10	20	08/14/13 15:42	khw
Sulfate	M300.0 - Ion Chromatography	1	40.0		*	mg/L	0.5	2.5	08/20/13 14:27	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L13800-03***
Date Sampled: *08/08/13 12:30*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	9.87		*	mg/L	0.5	2.5	08/20/13 14:45	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.53		*	mg/L	0.1	0.5	08/20/13 14:45	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.78	H		mg/L	0.02	0.1	08/28/13 9:37	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.78	H	*	mg/L	0.02	0.1	08/14/13 19:20	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/14/13 19:20	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	276		*	mg/L	10	20	08/14/13 15:44	khw
Sulfate	M300.0 - Ion Chromatography	1	32.8		*	mg/L	0.5	2.5	08/20/13 14:45	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BLM

ACZ Sample ID: ***L13800-04***
Date Sampled: *08/08/13 13:55*
Date Received: *08/12/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	23.0		*	mg/L	0.5	2.5	08/20/13 15:02	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.93		*	mg/L	0.1	0.5	08/20/13 15:02	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/28/13 9:38	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/14/13 19:21	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/14/13 19:21	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1570		*	mg/L	10	20	08/14/13 15:45	khw
Sulfate	M300.0 - Ion Chromatography	20	941		*	mg/L	10	50	08/21/13 12:35	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13800***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	30		31.6	mg/L	105.3	90	110			
L13804-05DUP	DUP	08/20/13 15:37			2.54	2.54	mg/L				0	20	RA
L13804-06AS	AS	08/20/13 16:12	WI130501-1	30	6.26	38.1	mg/L	106.1	90	110			
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	30		31.7	mg/L	105.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	1.5		1.6	mg/L	106.7	90	110			
L13804-05DUP	DUP	08/20/13 15:37			U	U	mg/L				0	20	RA
L13804-06AS	AS	08/20/13 16:12	WI130501-1	1.5	U	1.65	mg/L	110	90	110			
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	1.5		1.57	mg/L	104.7	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349449													
WG349449ICV	ICV	08/14/13 19:09	WI130712-3	2.416		2.341	mg/L	96.9	90	110			
WG349449ICB	ICB	08/14/13 19:10				U	mg/L		-0.06	0.06			
WG349449LFB	LFB	08/14/13 19:13	WI130215-3	2		2.005	mg/L	100.3	90	110			
L13800-01AS	AS	08/14/13 19:17	WI130215-3	2	.04	2.009	mg/L	98.5	90	110			
L13800-02DUP	DUP	08/14/13 19:19			1.1	1.076	mg/L				2.2	20	

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349449													
WG349449ICV	ICV	08/14/13 19:09	WI130712-3	.609		.614	mg/L	100.8	90	110			
WG349449ICB	ICB	08/14/13 19:10				U	mg/L		-0.03	0.03			
WG349449LFB	LFB	08/14/13 19:13	WI130215-3	1		1.045	mg/L	104.5	90	110			
L13800-01AS	AS	08/14/13 19:17	WI130215-3	1	U	.998	mg/L	99.8	90	110			
L13800-02DUP	DUP	08/14/13 19:19			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349438													
WG349438PBW	PBW	08/14/13 15:35				U	mg/L		-20	20			
WG349438LCSW	LCSW	08/14/13 15:36	PCN42845	260		266	mg/L	102.3	80	120			
L13806-02DUP	DUP	08/14/13 15:53			356	358	mg/L				0.6	10	

SPF Water Engineering

ACZ Project ID: ***L13800***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	30		31.6	mg/L	105.3	90	110			
L13804-05DUP	DUP	08/20/13 15:37			31.3	31.2	mg/L				0.3	20	
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	30		30.9	mg/L	103	90	110			
L13804-06AS	AS	08/21/13 13:10	WI130501-1	60	79.1	137	mg/L	96.5	90	110			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13800***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13800-01	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349449	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349438	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13800-02	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349449	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349438	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13800***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13800-03	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349449	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349438	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13800-04	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349449	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349438	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13800***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13800
Date Received: 08/12/2013 10:04
Received By: mtb
Date Printed: 8/12/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA18158	19.5	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13800

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr Suite 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote: SHORT-HOLDS-WETCHEM							
59766	8-8-13 8:52	GW	1	X							
59772	8-8-13 10:55	GW	1	X							
59760	8-8-13 12:30	GW	1	X							
BLM	8-8-13 13:55	GW	1	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	8-9-13 8:40		
		WPC 8-12-13 10:00	

L13800 Chain of Custody

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 06, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13811

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 13, 2013. This project has been assigned to ACZ's project number, L13811. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13811. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 06, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: 59766

ACZ Sample ID: ***L13811-01***
Date Sampled: *08/08/13 08:52*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 13:41	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/20/13 11:00	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 19:53	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/21/13 15:59	las
Total Hot Plate Digestion	M200.2 ICP								08/19/13 16:20	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: 59766

ACZ Sample ID: ***L13811-01***
Date Sampled: *08/08/13 08:52*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	08/16/13 1:43	aeb
Aluminum, total	M200.7 ICP	1	1.84			mg/L	0.03	0.2	08/20/13 14:48	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	08/21/13 23:48	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	08/23/13 18:05	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.1836			mg/L	0.0002	0.001	08/21/13 23:48	msh
Arsenic, total	M200.8 ICP-MS	5	0.206			mg/L	0.001	0.005	08/27/13 19:24	msh
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	08/16/13 1:43	aeb
Barium, total	M200.7 ICP	1	0.044			mg/L	0.003	0.02	08/20/13 14:48	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	08/21/13 23:48	msh
Beryllium, total	M200.8 ICP-MS	1	0.00023	B		mg/L	0.00005	0.0003	08/23/13 18:05	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 1:43	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:48	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/16/13 10:51	aeb
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/20/13 14:48	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:48	msh
Cadmium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	08/23/13 18:05	las
Calcium, dissolved	M200.7 ICP	1	40.2			mg/L	0.2	1	08/16/13 1:43	aeb
Calcium, total	M200.7 ICP	1	40.9			mg/L	0.2	1	08/20/13 14:48	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/13 23:48	msh
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	08/23/13 18:05	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00155			mg/L	0.00005	0.0003	08/21/13 23:48	msh
Cobalt, total	M200.8 ICP-MS	1	0.00129			mg/L	0.00005	0.0003	08/23/13 18:05	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 23:48	msh
Copper, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	08/23/13 18:05	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 10:51	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:48	aeb
Iron, dissolved	M200.7 ICP	1	0.90			mg/L	0.02	0.05	08/16/13 1:43	aeb
Iron, total	M200.7 ICP	1	2.77			mg/L	0.02	0.05	08/20/13 14:48	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:48	msh
Lead, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0005	08/23/13 18:05	las
Lithium, dissolved	M200.7 ICP	1	0.59			mg/L	0.02	0.1	08/16/13 10:51	aeb
Lithium, total	M200.7 ICP	1	0.58			mg/L	0.02	0.1	08/20/13 14:48	aeb
Magnesium, dissolved	M200.7 ICP	1	3.0			mg/L	0.2	1	08/16/13 1:43	aeb
Magnesium, total	M200.7 ICP	1	3.3			mg/L	0.2	1	08/20/13 14:48	aeb
Manganese, dissolved	M200.8 ICP-MS	5	0.422			mg/L	0.003	0.01	08/22/13 17:08	msh
Manganese, total	M200.8 ICP-MS	5	0.452			mg/L	0.003	0.01	08/27/13 19:24	msh
Mercury, dissolved	M1631, Atomic Fluorescence	2	1.2			ng/L	0.4	1	08/30/13 15:27	scp
Mercury, total	M1631, Atomic Fluorescence	10	13			ng/L	2	5	09/05/13 11:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0284			mg/L	0.0005	0.003	08/21/13 23:48	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0324			mg/L	0.0005	0.003	08/23/13 18:05	las
Nickel, dissolved	M200.8 ICP-MS	1	0.0033			mg/L	0.0006	0.003	08/21/13 23:48	msh
Nickel, total	M200.8 ICP-MS	1	0.0045			mg/L	0.0006	0.003	08/23/13 18:05	las
Potassium, dissolved	M200.7 ICP	1	10.1			mg/L	0.3	2	08/16/13 1:43	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: 59766

ACZ Sample ID: ***L13811-01***
Date Sampled: *08/08/13 08:52*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	10.4			mg/L	0.3	2	08/20/13 14:48	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 1:43	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:48	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	08/21/13 23:48	msh
Selenium, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0003	08/23/13 18:05	las
Silver, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	08/22/13 17:08	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:05	las
Sodium, dissolved	M200.7 ICP	1	144			mg/L	0.3	2	08/16/13 1:43	aeb
Sodium, total	M200.7 ICP	1	142			mg/L	0.3	2	08/20/13 14:48	aeb
Strontium, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	08/16/13 1:43	aeb
Strontium, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/20/13 14:48	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:48	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:05	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 23:48	msh
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	08/23/13 18:05	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 1:43	aeb
Titanium, total	M200.7 ICP	1	0.068			mg/L	0.005	0.03	08/20/13 14:48	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	08/21/13 23:48	msh
Uranium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0005	08/23/13 18:05	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	08/21/13 23:48	msh
Vanadium, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0002	0.001	08/23/13 18:05	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 1:43	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:48	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	92		*	mg/L	2	20	08/17/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Total Alkalinity		1	92		*	mg/L	2	20	08/17/13 0:00	khw
Conductivity @25C	SM2510B	1	873		*	umhos/cm	1	10	08/17/13 13:41	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:53	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 16:26	mpb
Hardness as CaCO3	SM2340B - Calculation		113			mg/L	1	7	09/06/13 10:45	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.04	B	*	mg/L	0.02	0.1	08/22/13 23:59	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.09	B	*	mg/L	0.05	0.5	08/22/13 17:19	bsu
pH (lab)	SM4500H+ B									
pH		1	7.8	H	*	units	0.1	0.1	08/17/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	08/17/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.93		*	mg/L	0.01	0.05	08/21/13 1:20	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	30		*	mg/L	5	20	08/15/13 13:00	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L13811-02***
Date Sampled: *08/08/13 10:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 13:58	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/20/13 11:16	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 19:58	bsu
Total Hot Plate Digestion	M200.2 ICP								08/19/13 16:32	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/21/13 16:11	las

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L13811-02***
Date Sampled: *08/08/13 10:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/16/13 1:46	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/20/13 14:51	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	08/21/13 23:52	msh
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	08/23/13 18:09	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0367			mg/L	0.0002	0.001	08/21/13 23:52	msh
Arsenic, total	M200.8 ICP-MS	1	0.0368			mg/L	0.0002	0.001	08/23/13 18:09	las
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	08/16/13 1:46	aeb
Barium, total	M200.7 ICP	1	0.029			mg/L	0.003	0.02	08/20/13 14:51	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 23:52	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:09	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 1:46	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:51	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	08/16/13 10:55	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/20/13 14:51	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:52	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:09	las
Calcium, dissolved	M200.7 ICP	1	40.0			mg/L	0.2	1	08/16/13 1:46	aeb
Calcium, total	M200.7 ICP	1	39.5			mg/L	0.2	1	08/20/13 14:51	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	08/21/13 23:52	msh
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	08/23/13 18:09	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00023	B		mg/L	0.00005	0.0003	08/21/13 23:52	msh
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	08/23/13 18:09	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 23:52	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 18:09	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 10:55	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:51	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/16/13 1:46	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/20/13 14:51	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:52	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:09	las
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/16/13 10:55	aeb
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	08/20/13 14:51	aeb
Magnesium, dissolved	M200.7 ICP	1	7.0			mg/L	0.2	1	08/16/13 1:46	aeb
Magnesium, total	M200.7 ICP	1	7.0			mg/L	0.2	1	08/20/13 14:51	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 23:52	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 18:09	las
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/30/13 15:34	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/05/13 11:53	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	08/21/13 23:52	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	08/23/13 18:09	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/21/13 23:52	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/23/13 18:09	las
Potassium, dissolved	M200.7 ICP	1	6.0			mg/L	0.3	2	08/16/13 1:46	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59772

ACZ Sample ID: ***L13811-02***
Date Sampled: *08/08/13 10:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.3	2	08/20/13 14:51	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 1:46	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:51	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0003	08/21/13 23:52	msh
Selenium, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0003	08/23/13 18:09	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 17:11	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:09	las
Sodium, dissolved	M200.7 ICP	1	26.7			mg/L	0.3	2	08/16/13 1:46	aeb
Sodium, total	M200.7 ICP	1	25.9			mg/L	0.3	2	08/20/13 14:51	aeb
Strontium, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/16/13 1:46	aeb
Strontium, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/20/13 14:51	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:52	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:09	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 23:52	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 18:09	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 1:46	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:51	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	08/21/13 23:52	msh
Uranium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	08/23/13 18:09	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0164			mg/L	0.0002	0.001	08/21/13 23:52	msh
Vanadium, total	M200.8 ICP-MS	1	0.0190			mg/L	0.0002	0.001	08/23/13 18:09	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 1:46	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:51	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	128		*	mg/L	2	20	08/17/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Total Alkalinity		1	128		*	mg/L	2	20	08/17/13 0:00	khw
Conductivity @25C	SM2510B	1	364		*	umhos/cm	1	10	08/17/13 13:50	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:54	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 16:27	mpb
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	1	7	09/06/13 10:46	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.05		*	mg/L	0.02	0.1	08/23/13 0:00	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/22/13 17:21	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/17/13 0:00	khw
pH measured at		1	20.0		*	C	0.1	0.1	08/17/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/21/13 1:21	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/15/13 13:01	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L13811-03***
Date Sampled: *08/08/13 12:30*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 14:07	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/20/13 11:31	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 20:04	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/21/13 16:23	las
Total Hot Plate Digestion	M200.2 ICP								08/19/13 16:43	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L13811-03***
Date Sampled: *08/08/13 12:30*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/16/13 1:49	aeb
Aluminum, total	M200.7 ICP	1	0.15	B		mg/L	0.03	0.2	08/20/13 14:54	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	08/21/13 23:55	msh
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	08/23/13 18:19	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0237			mg/L	0.0002	0.001	08/21/13 23:55	msh
Arsenic, total	M200.8 ICP-MS	1	0.0267			mg/L	0.0002	0.001	08/23/13 18:19	las
Barium, dissolved	M200.7 ICP	1	0.051			mg/L	0.003	0.02	08/16/13 1:49	aeb
Barium, total	M200.7 ICP	1	0.052			mg/L	0.003	0.02	08/20/13 14:54	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 23:55	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:19	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 1:49	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:54	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/16/13 10:58	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/20/13 14:54	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:55	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:19	las
Calcium, dissolved	M200.7 ICP	1	39.8			mg/L	0.2	1	08/16/13 1:49	aeb
Calcium, total	M200.7 ICP	1	40.4			mg/L	0.2	1	08/20/13 14:54	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	08/21/13 23:55	msh
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	08/23/13 18:19	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	08/21/13 23:55	msh
Cobalt, total	M200.8 ICP-MS	1	0.00020	B		mg/L	0.00005	0.0003	08/23/13 18:19	las
Copper, dissolved	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	08/21/13 23:55	msh
Copper, total	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	08/23/13 18:19	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 10:58	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:54	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/16/13 1:49	aeb
Iron, total	M200.7 ICP	1	0.11			mg/L	0.02	0.05	08/20/13 14:54	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:55	msh
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	08/23/13 18:19	las
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/16/13 10:58	aeb
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/20/13 14:54	aeb
Magnesium, dissolved	M200.7 ICP	1	6.5			mg/L	0.2	1	08/16/13 1:49	aeb
Magnesium, total	M200.7 ICP	1	6.8			mg/L	0.2	1	08/20/13 14:54	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 23:55	msh
Manganese, total	M200.8 ICP-MS	1	0.0057			mg/L	0.0005	0.003	08/23/13 18:19	las
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/30/13 15:41	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.5	B	*	ng/L	0.4	1	09/05/13 12:00	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	08/21/13 23:55	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	08/23/13 18:19	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/21/13 23:55	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/23/13 18:19	las
Potassium, dissolved	M200.7 ICP	1	7.1			mg/L	0.3	2	08/16/13 1:49	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: 59760

ACZ Sample ID: ***L13811-03***
Date Sampled: *08/08/13 12:30*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.4			mg/L	0.3	2	08/20/13 14:54	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 1:49	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:54	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	08/21/13 23:55	msh
Selenium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	08/23/13 18:19	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/22/13 17:15	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:19	las
Sodium, dissolved	M200.7 ICP	1	25.6			mg/L	0.3	2	08/16/13 1:49	aeb
Sodium, total	M200.7 ICP	1	25.6			mg/L	0.3	2	08/20/13 14:54	aeb
Strontium, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	08/16/13 1:49	aeb
Strontium, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	08/20/13 14:54	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:55	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:19	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 23:55	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 18:19	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/16/13 1:49	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:54	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	08/21/13 23:55	msh
Uranium, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	08/23/13 18:19	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0124			mg/L	0.0002	0.001	08/21/13 23:55	msh
Vanadium, total	M200.8 ICP-MS	1	0.0158			mg/L	0.0002	0.001	08/23/13 18:19	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/16/13 1:49	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/20/13 14:54	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	138		*	mg/L	2	20	08/17/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Total Alkalinity		1	138		*	mg/L	2	20	08/17/13 0:00	khw
Conductivity @25C	SM2510B	1	362		*	umhos/cm	1	10	08/17/13 13:59	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:55	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 16:29	mpb
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	1	7	09/06/13 10:46	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.74		*	mg/L	0.02	0.1	08/23/13 0:04	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/22/13 17:22	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/17/13 0:00	khw
pH measured at		1	19.0		*	C	0.1	0.1	08/17/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	08/21/13 1:44	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/15/13 13:03	abm

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BLM

ACZ Sample ID: ***L13811-04***
Date Sampled: *08/08/13 13:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/19/13 14:16	mpb
Cyanide, WAD	SM4500-CN I- distillation								08/20/13 11:39	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/16/13 20:09	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								08/21/13 16:35	las
Total Hot Plate Digestion	M200.2 ICP								08/19/13 16:55	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BLM

ACZ Sample ID: ***L13811-04***
Date Sampled: *08/08/13 13:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/16/13 1:52	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/20/13 14:57	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	08/21/13 23:58	msh
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	08/23/13 18:23	las
Arsenic, dissolved	M200.8 ICP-MS	20	2.880			mg/L	0.004	0.02	08/22/13 17:18	msh
Arsenic, total	M200.8 ICP-MS	20	2.830			mg/L	0.004	0.02	08/27/13 19:27	msh
Barium, dissolved	M200.7 ICP	1	0.065			mg/L	0.003	0.02	08/16/13 1:52	aeb
Barium, total	M200.7 ICP	1	0.062			mg/L	0.003	0.02	08/20/13 14:57	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/13 23:58	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:23	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/16/13 1:52	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/20/13 14:57	aeb
Boron, dissolved	M200.7 ICP	1	0.67			mg/L	0.01	0.05	08/16/13 11:01	aeb
Boron, total	M200.7 ICP	1	0.66			mg/L	0.01	0.05	08/20/13 14:57	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:58	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:23	las
Calcium, dissolved	M200.7 ICP	1	132			mg/L	0.2	1	08/16/13 1:52	aeb
Calcium, total	M200.7 ICP	1	125			mg/L	0.2	1	08/20/13 14:57	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/13 23:58	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/23/13 18:23	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.05538			mg/L	0.00005	0.0003	08/21/13 23:58	msh
Cobalt, total	M200.8 ICP-MS	1	0.05864			mg/L	0.00005	0.0003	08/23/13 18:23	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/21/13 23:58	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 18:23	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 11:01	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:57	aeb
Iron, dissolved	M200.7 ICP	1	113			mg/L	0.02	0.05	08/16/13 1:52	aeb
Iron, total	M200.7 ICP	1	111			mg/L	0.02	0.05	08/20/13 14:57	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:58	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/23/13 18:23	las
Lithium, dissolved	M200.7 ICP	1	0.68			mg/L	0.02	0.1	08/16/13 11:01	aeb
Lithium, total	M200.7 ICP	1	0.64			mg/L	0.02	0.1	08/20/13 14:57	aeb
Magnesium, dissolved	M200.7 ICP	1	6.4			mg/L	0.2	1	08/16/13 1:52	aeb
Magnesium, total	M200.7 ICP	1	6.2			mg/L	0.2	1	08/20/13 14:57	aeb
Manganese, dissolved	M200.8 ICP-MS	20	1.05			mg/L	0.01	0.05	08/22/13 17:18	msh
Manganese, total	M200.8 ICP-MS	20	0.99			mg/L	0.01	0.05	08/27/13 19:27	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	08/30/13 15:48	scp
Mercury, total	M1631, Atomic Fluorescence	2	2.8			ng/L	0.4	1	09/05/13 12:07	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.003	08/21/13 23:58	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	08/23/13 18:23	las
Nickel, dissolved	M200.8 ICP-MS	1	0.0430			mg/L	0.0006	0.003	08/21/13 23:58	msh
Nickel, total	M200.8 ICP-MS	1	0.0471			mg/L	0.0006	0.003	08/23/13 18:23	las
Potassium, dissolved	M200.7 ICP	1	5.1			mg/L	0.3	2	08/16/13 1:52	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: BLM

ACZ Sample ID: ***L13811-04***
Date Sampled: *08/08/13 13:55*
Date Received: *08/13/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.2			mg/L	0.3	2	08/20/13 14:57	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/16/13 1:52	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/20/13 14:57	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/21/13 23:58	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/23/13 18:23	las
Silver, dissolved	M200.8 ICP-MS	20		U		mg/L	0.001	0.005	08/22/13 17:18	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 18:23	las
Sodium, dissolved	M200.7 ICP	1	286			mg/L	0.3	2	08/16/13 1:52	aeb
Sodium, total	M200.7 ICP	1	278			mg/L	0.3	2	08/20/13 14:57	aeb
Strontium, dissolved	M200.7 ICP	1	2.94			mg/L	0.01	0.05	08/16/13 1:52	aeb
Strontium, total	M200.7 ICP	1	2.84			mg/L	0.01	0.05	08/20/13 14:57	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/13 23:58	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 18:23	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/21/13 23:58	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 18:23	las
Titanium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	08/16/13 1:52	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/20/13 14:57	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/21/13 23:58	msh
Uranium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	08/23/13 18:23	las
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/21/13 23:58	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/23/13 18:23	las
Zinc, dissolved	M200.7 ICP	1	0.33			mg/L	0.01	0.05	08/16/13 1:52	aeb
Zinc, total	M200.7 ICP	1	0.32			mg/L	0.01	0.05	08/20/13 14:57	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	64		*	mg/L	2	20	08/17/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/17/13 0:00	khw
Total Alkalinity		1	64		*	mg/L	2	20	08/17/13 0:00	khw
Conductivity @25C	SM2510B	1	1840		*	umhos/cm	1	10	08/17/13 14:07	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 15:56	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/20/13 16:30	mpb
Hardness as CaCO3	SM2340B - Calculation		356			mg/L	1	7	09/06/13 10:46	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/23/13 0:05	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.74		*	mg/L	0.05	0.5	08/22/13 18:03	bsu
pH (lab)	SM4500H+ B									
pH		1	7.2	H	*	units	0.1	0.1	08/17/13 0:00	khw
pH measured at		1	19.0		*	C	0.1	0.1	08/17/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.39		*	mg/L	0.01	0.05	08/21/13 1:24	pjb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	140		*	mg/L	5	20	08/15/13 13:04	abm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13811***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615PBW1	PBW	08/17/13 13:07				U	mg/L		-20	20			
WG349615LCSW2	LCSW	08/17/13 13:20	WC130806-	820.0001		777.9	mg/L	94.9	90	110			
L13823-06DUP	DUP	08/17/13 15:03			59	58	mg/L				1.7	20	
WG349615LCSW5	LCSW	08/17/13 17:01	WC130806-	820.0001		770.3	mg/L	93.9	90	110			
WG349615PBW2	PBW	08/17/13 17:10				3.4	mg/L		-20	20			
WG349615LCSW8	LCSW	08/17/13 20:30	WC130806-	820.0001		788.6	mg/L	96.2	90	110			
WG349615PBW3	PBW	08/17/13 20:38				U	mg/L		-20	20			
WG349615LCSW11	LCSW	08/17/13 23:31	WC130806-	820.0001		793.4	mg/L	96.8	90	110			
WG349615PBW4	PBW	08/17/13 23:40				4.2	mg/L		-20	20			
WG349615LCSW14	LCSW	08/18/13 2:38	WC130806-	820.0001		781.5	mg/L	95.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.946	mg/L	97.3	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.09	0.09			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	1.0011		1.062	mg/L	106.1	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	1.0011	.24	1.252	mg/L	101.1	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	1.0011	.24	1.269	mg/L	102.8	85	115	1.35	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.021	mg/L	101.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.09	0.09			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.066	0.066			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0011		1.016	mg/L	101.5	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1.0011	U	1.033	mg/L	103.2	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1.0011	U	1.027	mg/L	102.6	70	130	0.58	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.02		.02154	mg/L	107.7	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0012	0.0012			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.01		.00975	mg/L	97.5	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.01	U	.00902	mg/L	90.2	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.01	U	.00966	mg/L	96.6	70	130	6.85	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.02		.02103	mg/L	105.2	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0012	0.0012			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00088	0.00088			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.01		.01092	mg/L	109.2	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.01	U	.01096	mg/L	109.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.01	U	.01112	mg/L	111.2	70	130	1.45	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05005	mg/L	100.1	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0006	0.0006			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04773	mg/L	95.4	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.001	.05459	mg/L	107.1	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.001	.05877	mg/L	115.4	70	130	7.37	20	
WG349865													
WG349865ICV	ICV	08/22/13 16:44	MS130717-9	.05		.05344	mg/L	106.9	90	110			
WG349865ICB	ICB	08/22/13 16:48				U	mg/L		-0.0006	0.0006			
WG349865LFB	LFB	08/22/13 16:51	MS130816-3	.05005		.05139	mg/L	102.7	85	115			
L13811-04AS	AS	08/22/13 17:28	MS130816-3	1.001	2.88	3.936	mg/L	105.5	70	130			
L13811-04ASD	ASD	08/22/13 17:31	MS130816-3	1.001	2.88	3.874	mg/L	99.3	70	130	1.59	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05139	mg/L	102.8	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0006	0.0006			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00044	0.00044			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.05273	mg/L	105.4	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	.0006	.05444	mg/L	107.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	.0006	.05602	mg/L	110.7	70	130	2.86	20	
WG350091													
WG350091ICV	ICV	08/27/13 19:13	MS130717-9	.05		.05372	mg/L	107.4	90	110			
WG350091ICB	ICB	08/27/13 19:16				U	mg/L		-0.0006	0.0006			
WG349795LRB	LRB	08/27/13 19:19				U	mg/L		-0.00044	0.00044			
WG349795LFB	LFB	08/27/13 19:21	MS130816-3	.05005		.0537	mg/L	107.3	85	115			
L13906-03LFM	LFM	08/27/13 19:32	MS130816-3	.05005	.0007	.05275	mg/L	104	70	130			
L13906-03LFMD	LFMD	08/27/13 19:35	MS130816-3	.05005	.0007	.0522	mg/L	102.9	70	130	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.94	mg/L	97	95	105			
WG349526ICB	ICB	08/16/13 1:27				.0067	mg/L		-0.009	0.009			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	.5		.502	mg/L	100.4	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	.5	.043	.5346	mg/L	98.3	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	.5	.043	.5367	mg/L	98.7	85	115	0.39	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.9818	mg/L	99.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.009	0.009			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.0066	0.0066			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.479	mg/L	95.8	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	.5	.139	.628	mg/L	97.8	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	.5	.139	.6237	mg/L	96.9	70	130	0.69	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04592	mg/L	91.8	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.00015	0.00015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.0501		.04649	mg/L	92.8	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.0501	U	.05028	mg/L	100.4	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.0501	U	.0522	mg/L	104.2	70	130	3.75	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.04617	mg/L	92.3	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.00015	0.00015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00011	0.00011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.0501		.04738	mg/L	94.6	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.0501	U	.04614	mg/L	92.1	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.0501	U	.04613	mg/L	92.1	70	130	0.02	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.913	mg/L	95.7	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.12	0.12			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	1		.993	mg/L	99.3	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	1	U	1.025	mg/L	102.5	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	1	U	1.014	mg/L	101.4	85	115	1.08	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.025	mg/L	101.3	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.12	0.12			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.088	0.088			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		1.002	mg/L	100.2	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1	U	1.017	mg/L	101.7	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1	U	1.023	mg/L	102.3	70	130	0.59	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349550													
WG349550ICV	ICV	08/16/13 10:30	II130729-1	2		2.019	mg/L	101	95	105			
WG349550ICB	ICB	08/16/13 10:36				U	mg/L		-0.03	0.03			
WG349550LFB	LFB	08/16/13 10:48	II130716-5	.5005		.529	mg/L	105.7	85	115			
L13833-04AS	AS	08/16/13 11:16	II130716-5	5.005	U	4.77	mg/L	95.3	85	115			
L13833-04ASD	ASD	08/16/13 11:26	II130716-5	5.005	U	4.91	mg/L	98.1	85	115	2.89	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.002	mg/L	100.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5005		.495	mg/L	98.9	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	.5005	.01	.507	mg/L	99.3	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	.5005	.01	.507	mg/L	99.3	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04828	mg/L	96.6	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.0501		.0468	mg/L	93.4	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.0501	U	.04737	mg/L	94.6	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.0501	U	.04913	mg/L	98.1	70	130	3.65	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05102	mg/L	102	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.0501		.05088	mg/L	101.6	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.0501	U	.05026	mg/L	100.3	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.0501	U	.05092	mg/L	101.6	70	130	1.3	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	100		100.32	mg/L	100.3	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.6	0.6			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	68.0028		73.52	mg/L	108.1	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	68.0028	7.5	80.4	mg/L	107.2	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	68.0028	7.5	80.99	mg/L	108.1	85	115	0.73	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		98.95	mg/L	99	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.6	0.6			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.44	0.44			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	68.0028		69.23	mg/L	101.8	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	68.0028	32.6	102.5	mg/L	102.8	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	68.0028	32.6	101.5	mg/L	101.3	70	130	0.98	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04695	mg/L	93.9	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0015	0.0015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.0459	mg/L	91.7	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	U	.04451	mg/L	88.9	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	U	.04824	mg/L	96.4	70	130	8.04	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.04991	mg/L	99.8	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0015	0.0015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.0011	0.0011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.04836	mg/L	96.6	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	.0008	.0522	mg/L	102.7	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	.0008	.05368	mg/L	105.7	70	130	2.8	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05063	mg/L	101.3	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.00015	0.00015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04903	mg/L	98	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.00227	.04901	mg/L	93.4	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.00227	.05025	mg/L	95.9	70	130	2.5	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05003	mg/L	100.1	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.00015	0.00015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00011	0.00011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.05051	mg/L	100.9	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	.00006	.04949	mg/L	98.8	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	.00006	.04909	mg/L	98	70	130	0.81	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615LCSW1	LCSW	08/17/13 13:08	PCN42819	1408.8		1454.9	umhos/cm	103.3	90	110			
L13823-06DUP	DUP	08/17/13 15:03			165	164.2	umhos/cm				0.5	20	
WG349615LCSW4	LCSW	08/17/13 16:50	PCN42819	1408.8		1434.4	umhos/cm	101.8	90	110			
WG349615LCSW7	LCSW	08/17/13 20:18	PCN42819	1408.8		1417.1	umhos/cm	100.6	90	110			
WG349615LCSW10	LCSW	08/17/13 23:19	PCN42819	1408.8		1408.9	umhos/cm	100	90	110			
WG349615LCSW13	LCSW	08/18/13 2:27	PCN42819	1408.8		1393.6	umhos/cm	98.9	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04873	mg/L	97.5	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0015	0.0015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04635	mg/L	92.6	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.0017	.04616	mg/L	88.8	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.0017	.04943	mg/L	95.4	70	130	6.84	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.0497	mg/L	99.4	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0015	0.0015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.0011	0.0011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.04808	mg/L	96.1	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	.0008	.05082	mg/L	99.9	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	.0008	.05191	mg/L	102.1	70	130	2.12	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349739													
WG349739ICV	ICV	08/20/13 14:44	WI130807-6	.3		.3004	mg/L	100.1	90	110			
WG349739ICB	ICB	08/20/13 14:45				U	mg/L		-0.003	0.003			
WG349746													
WG349649LRB	LRB	08/20/13 15:38				U	mg/L		-0.003	0.003			
WG349649LFB	LFB	08/20/13 15:39	WI130807-2	.2		.2088	mg/L	104.4	90	110			
L13796-04DUP	DUP	08/20/13 15:52			U	U	mg/L				0	20	RA
L13811-01LFM	LFM	08/20/13 15:53	WI130807-2	.2	U	.192	mg/L	96	90	110			

SPF Water Engineering

ACZ Project ID: ***L13811***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349739													
WG349739ICV	ICV	08/20/13 14:44	WI130807-6	.3		.3004	mg/L	100.1	90	110			
WG349739ICB	ICB	08/20/13 14:45				U	mg/L		-0.003	0.003			
WG349749													
WG349714LRB	LRB	08/20/13 16:24				U	mg/L		-0.003	0.003			
WG349714LFB	LFB	08/20/13 16:25	WI130807-4	.2		.1919	mg/L	96	90	110			
L13811-01DUP	DUP	08/20/13 16:26			U	U	mg/L				0	20	RA
L13811-02LFM	LFM	08/20/13 16:28	WI130807-4	.2	U	.1719	mg/L	86	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349550													
WG349550ICV	ICV	08/16/13 10:30	II130729-1	2		2.08	mg/L	104	95	105			
WG349550ICB	ICB	08/16/13 10:36				U	mg/L		-0.3	0.3			
WG349550LFB	LFB	08/16/13 10:48	II130716-5	1		1.06	mg/L	106	85	115			
L13833-04AS	AS	08/16/13 11:16	II130716-5	10	U	9.9	mg/L	99	85	115			
L13833-04ASD	ASD	08/16/13 11:26	II130716-5	10	U	10.1	mg/L	101	85	115	2	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.05	mg/L	102.5	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.3	0.3			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.22	0.22			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		1	mg/L	100	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1	U	1.04	mg/L	104	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1	U	1.01	mg/L	101	70	130	2.93	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.951	mg/L	97.6	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.06	0.06			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	1.0014		1.046	mg/L	104.5	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	1.0014	.09	1.038	mg/L	94.7	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	1.0014	.09	1.023	mg/L	93.2	85	115	1.46	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.989	mg/L	99.5	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.06	0.06			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.044	0.044			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0014		1.014	mg/L	101.3	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1.0014	U	1.008	mg/L	100.7	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1.0014	U	1.002	mg/L	100.1	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05229	mg/L	104.6	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04885	mg/L	97.6	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.0023	.05011	mg/L	95.5	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.0023	.05159	mg/L	98.5	70	130	2.91	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05	mg/L	100	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.04695	mg/L	93.8	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	U	.04883	mg/L	97.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	U	.04857	mg/L	97	70	130	0.53	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349550													
WG349550ICV	ICV	08/16/13 10:30	II130729-1	2		2.021	mg/L	101.1	95	105			
WG349550ICB	ICB	08/16/13 10:36				U	mg/L		-0.06	0.06			
WG349550LFB	LFB	08/16/13 10:48	II130716-5	1		1.023	mg/L	102.3	85	115			
L13833-04AS	AS	08/16/13 11:16	II130716-5	10	U	9.76	mg/L	97.6	85	115			
L13833-04ASD	ASD	08/16/13 11:26	II130716-5	10	U	9.77	mg/L	97.7	85	115	0.1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.998	mg/L	99.9	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.06	0.06			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.044	0.044			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		.95	mg/L	95	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1	U	.981	mg/L	98.1	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1	U	.974	mg/L	97.4	70	130	0.72	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	100		98.79	mg/L	98.8	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.6	0.6			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	49.99752		51.95	mg/L	103.9	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	49.99752	4.6	56.54	mg/L	103.9	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	49.99752	4.6	56.94	mg/L	104.7	85	115	0.7	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		96.96	mg/L	97	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.6	0.6			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.44	0.44			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	49.99752		48.79	mg/L	97.6	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	49.99752	16.6	66	mg/L	98.8	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	49.99752	16.6	65.34	mg/L	97.5	70	130	1.01	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.0503	mg/L	100.6	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0015	0.0015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04895	mg/L	97.8	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.0222	.06725	mg/L	90	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.0222	.06881	mg/L	93.1	70	130	2.29	20	
WG349865													
WG349865ICV	ICV	08/22/13 16:44	MS130717-9	.05		.04999	mg/L	100	90	110			
WG349865ICB	ICB	08/22/13 16:48				U	mg/L		-0.0015	0.0015			
WG349865LFB	LFB	08/22/13 16:51	MS130816-3	.05005		.05021	mg/L	100.3	85	115			
L13811-04AS	AS	08/22/13 17:28	MS130816-3	1.001	1.05	1.999	mg/L	94.8	70	130			
L13811-04ASD	ASD	08/22/13 17:31	MS130816-3	1.001	1.05	1.981	mg/L	93	70	130	0.9	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05013	mg/L	100.3	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0015	0.0015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.0011	0.0011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.05004	mg/L	100	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	.0016	.05196	mg/L	100.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	.0016	.05133	mg/L	99.4	70	130	1.22	20	
WG350091													
WG350091ICV	ICV	08/27/13 19:13	MS130717-9	.05		.04972	mg/L	99.4	90	110			
WG350091ICB	ICB	08/27/13 19:16				U	mg/L		-0.0015	0.0015			
WG349795LRB	LRB	08/27/13 19:19				U	mg/L		-0.0011	0.0011			
WG349795LFB	LFB	08/27/13 19:21	MS130816-3	.05005		.04818	mg/L	96.3	85	115			
L13906-03LFM	LFM	08/27/13 19:32	MS130816-3	.05005	.0017	.05114	mg/L	98.8	70	130			
L13906-03LFMD	LFMD	08/27/13 19:35	MS130816-3	.05005	.0017	.05103	mg/L	98.6	70	130	0.22	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350216													
WG350216ICV	ICV	08/29/13 12:32	HG130725-7	10		9.05	ng/L	90.5	79	121			
WG350216ICB	ICB	08/29/13 12:38				U	ng/L		-0.5	0.5			
WG350216ICV2	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350216ICB2	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322													
WG350322ICV	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350322ICB	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322PQV	PQV	08/30/13 9:58	HG130725-8	.5		.6	ng/L	120	70	130			
WG350322CCV1	CCV	08/30/13 12:52	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350322CCB1	CCB	08/30/13 12:59				U	ng/L		-0.5	0.5			
WG350322LFB	LFB	08/30/13 13:06	HG130725-9	2		1.85	ng/L	92.5	71	125			
WG350322CCV2	CCV	08/30/13 14:17	HG130725-7	10		9.58	ng/L	95.8	76.5	123.4			
WG350322CCB2	CCB	08/30/13 14:24				U	ng/L		-0.5	0.5			
L13796-04MS	MS	08/30/13 14:59	HG130725-9	2	.3	1.91	ng/L	80.5	71	125			
L13796-04MSD	MSD	08/30/13 15:06	HG130725-9	2	.3	1.84	ng/L	77	71	125	3.73	24	
WG350322CCV3	CCV	08/30/13 15:13	HG130725-7	10		8.82	ng/L	88.2	76.5	123.4			
WG350322CCB3	CCB	08/30/13 15:20				U	ng/L		-0.5	0.5			
WG350322CCV4	CCV	08/30/13 16:23	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350322CCB4	CCB	08/30/13 16:30				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350543													
WG350543ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350543ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350610													
WG350610CCV1	CCV	09/05/13 9:37	HG130725-7	10		9.4	ng/L	94	76.5	123.4			
WG350610CCB1	CCB	09/05/13 9:44				U	ng/L		-0.5	0.5			
WG350610PQV	PQV	09/05/13 9:51	HG130725-8	.5		.45	ng/L	90	70	130			
WG350610LFB	LFB	09/05/13 9:58	HG130725-9	2		1.76	ng/L	88	71	125			
WG350610CCV2	CCV	09/05/13 11:04	HG130725-7	10		8.93	ng/L	89.3	76.5	123.4			
WG350610CCB2	CCB	09/05/13 11:11				U	ng/L		-0.5	0.5			
L13809-01MS	MS	09/05/13 11:32	HG5XPREP	50	1	9.5	ng/L	85	71	125			
L13809-01MSD	MSD	09/05/13 11:39	HG5XPREP	50	1	9.8	ng/L	88	71	125	3.11	24	
WG350610CCV3	CCV	09/05/13 12:14	HG130725-7	10		8.72	ng/L	87.2	76.5	123.4			
WG350610CCB3	CCB	09/05/13 12:21				U	ng/L		-0.5	0.5			
WG350610CCV4	CCV	09/05/13 13:03	HG130725-7	10		8.67	ng/L	86.7	76.5	123.4			
WG350610CCB4	CCB	09/05/13 13:10				U	ng/L		-0.5	0.5			
WG350610CCV5	CCV	09/05/13 13:53	HG130725-7	10		8.59	ng/L	85.9	76.5	123.4			
WG350610CCB5	CCB	09/05/13 14:00				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L13811***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.02006		.01952	mg/L	97.3	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0015	0.0015			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05		.04983	mg/L	99.7	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05	U	.05223	mg/L	104.5	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05	U	.05089	mg/L	101.8	70	130	2.6	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.02006		.01973	mg/L	98.4	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0015	0.0015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.0011	0.0011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05		.04769	mg/L	95.4	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05	U	.04958	mg/L	99.2	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05	U	.04987	mg/L	99.7	70	130	0.58	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04854	mg/L	97.1	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0018	0.0018			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04574	mg/L	91.4	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	.0018	.04529	mg/L	86.9	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	.0018	.0486	mg/L	93.5	70	130	7.05	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.0493	mg/L	98.6	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0018	0.0018			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00132	0.00132			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.04651	mg/L	92.9	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	U	.04909	mg/L	98.1	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	U	.05032	mg/L	100.5	70	130	2.47	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349914													
WG349914ICV	ICV	08/22/13 19:42	WI130712-3	2.416		2.381	mg/L	98.6	90	110			
WG349914ICB	ICB	08/22/13 19:43				U	mg/L		-0.06	0.06			
WG349922													
WG349922LFB	LFB	08/22/13 23:50	WI130816-3	2		1.872	mg/L	93.6	90	110			
L13796-01AS	AS	08/22/13 23:52	WI130816-3	2	.25	2.053	mg/L	90.2	90	110			
L13796-02DUP	DUP	08/22/13 23:54			.06	.06	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13811***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349863													
WG349863ICV	ICV	08/22/13 13:45	WI121105-5	1.003		1.074	mg/L	107.1	90	110			
WG349863ICB	ICB	08/22/13 13:48				U	mg/L		-0.15	0.15			
WG349905													
WG349905LFB1	LFB	08/22/13 17:16	WI121218-3	1		1.015	mg/L	101.5	90	110			
L13808-01AS	AS	08/22/13 17:18	WI121218-3	1	.88	1.883	mg/L	100.3	90	110			
L13811-01DUP	DUP	08/22/13 17:20			.09	.084	mg/L				6.9	20	RA
WG349905LFB2	LFB	08/22/13 17:47	WI121218-3	1		1.025	mg/L	102.5	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615LCSW3	LCSW	08/17/13 13:24	PCN41777	6		6.02	units	100.3	98	102			
L13823-06DUP	DUP	08/17/13 15:03			8	7.95	units				0.6	20	
WG349615LCSW6	LCSW	08/17/13 17:05	PCN41777	6		6.03	units	100.5	98	102			
WG349615LCSW9	LCSW	08/17/13 20:33	PCN41777	6		6.03	units	100.5	98	102			
WG349615LCSW12	LCSW	08/17/13 23:35	PCN41777	6		6.03	units	100.5	98	102			
WG349615LCSW15	LCSW	08/18/13 2:42	PCN41777	6		6.03	units	100.5	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349759													
WG349759ICV	ICV	08/21/13 0:48	WI130725-8	.65228		.637	mg/L	97.7	90	110			
WG349759ICB	ICB	08/21/13 0:51				U	mg/L		-0.03	0.03			
WG349600LRB	LRB	08/21/13 0:52				U	mg/L		-0.03	0.03			
WG349600LFB	LFB	08/21/13 0:53	WI130806-6	.5		.477	mg/L	95.4	90	110			
L13796-04LFM	LFM	08/21/13 1:11	WI130806-6	.5	.05	.517	mg/L	93.4	90	110			
L13797-01DUP	DUP	08/21/13 1:13			.08	.082	mg/L				2.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	20		19.9	mg/L	99.5	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.9	0.9			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	99.96112		104.8	mg/L	104.8	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	99.96112	1.8	105.4	mg/L	103.6	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	99.96112	1.8	106.1	mg/L	104.3	85	115	0.66	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	20		19.82	mg/L	99.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.9	0.9			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.66	0.66			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	99.96112		98.06	mg/L	98.1	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	99.96112	1.7	101.2	mg/L	99.5	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	99.96112	1.7	100.5	mg/L	98.8	70	130	0.69	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349497													
WG349497PBW	PBW	08/15/13 12:45				U	mg/L		-6	6			
WG349497LCSW	LCSW	08/15/13 12:46	PCN42845	160		152	mg/L	95	80	120			
L13771-01DUP	DUP	08/15/13 12:54			U	U	mg/L				0	10	RA
L13858-01DUP	DUP	08/15/13 13:11			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.9	mg/L	95	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.3	0.3			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	1.0009		.95	mg/L	94.9	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	1.0009	U	.94	mg/L	93.9	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	1.0009	U	.94	mg/L	93.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2	mg/L	100	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.3	0.3			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.22	0.22			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1.0009		1	mg/L	99.9	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1.0009	U	1.02	mg/L	101.9	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130	0.99	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05053	mg/L	101.1	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04801	mg/L	95.9	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	U	.0525	mg/L	104.9	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	U	.05314	mg/L	106.2	70	130	1.21	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05067	mg/L	101.3	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.05338	mg/L	106.7	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	U	.04984	mg/L	99.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	U	.05138	mg/L	102.7	70	130	3.04	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349865													
WG349865ICV	ICV	08/22/13 16:44	MS130717-9	.02002		.01793	mg/L	89.6	90	110			
WG349865ICB	ICB	08/22/13 16:48				U	mg/L		-0.00015	0.00015			
WG349865LFB	LFB	08/22/13 16:51	MS130816-3	.01001		.008499	mg/L	84.9	85	115			
L13811-04AS	AS	08/22/13 17:28	MS130816-3	.2002	U	.166	mg/L	82.9	70	130			
L13811-04ASD	ASD	08/22/13 17:31	MS130816-3	.2002	U	.1654	mg/L	82.6	70	130	0.36	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.02002		.01863	mg/L	93.1	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.00015	0.00015			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00011	0.00011			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.01001		.008912	mg/L	89	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.01001	U	.008916	mg/L	89.1	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.01001	U	.009055	mg/L	90.5	70	130	1.55	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	100		100.23	mg/L	100.2	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.9	0.9			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	100.0495		104.5	mg/L	104.4	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	100.0495	120	217	mg/L	97	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	100.0495	120	217.3	mg/L	97.3	85	115	0.14	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	100		98.73	mg/L	98.7	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.9	0.9			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.66	0.66			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	100.0495		97.31	mg/L	97.3	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	100.0495	40.4	139.2	mg/L	98.8	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	100.0495	40.4	139	mg/L	98.6	70	130	0.14	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.967	mg/L	98.4	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.03	0.03			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	.5		.509	mg/L	101.8	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	.5	.07	.565	mg/L	99	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	.5	.07	.569	mg/L	99.8	85	115	0.71	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		2.004	mg/L	100.2	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.483	mg/L	96.6	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	.5	.64	1.129	mg/L	97.8	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	.5	.64	1.126	mg/L	97.2	70	130	0.27	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05329	mg/L	106.6	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.05009	mg/L	100.1	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	U	.04941	mg/L	98.7	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	U	.05062	mg/L	101.1	70	130	2.42	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05431	mg/L	108.6	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.0486	mg/L	97.1	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	U	.0521	mg/L	104.1	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	U	.05167	mg/L	103.2	70	130	0.83	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05015		.05311	mg/L	105.9	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05005		.04976	mg/L	99.4	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05005	U	.04912	mg/L	98.1	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05005	U	.04794	mg/L	95.8	70	130	2.43	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05015		.05148	mg/L	102.7	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05005		.04805	mg/L	96	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05005	U	.04973	mg/L	99.4	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05005	U	.04933	mg/L	98.6	70	130	0.81	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.9288	mg/L	96.4	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.015	0.015			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	1		1.01	mg/L	101	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	1	U	.998	mg/L	99.8	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	1	U	1.002	mg/L	100.2	85	115	0.4	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.9715	mg/L	98.6	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.015	0.015			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.011	0.011			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	1		.9814	mg/L	98.1	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	1	U	.9954	mg/L	99.5	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	1	U	.9887	mg/L	98.9	70	130	0.68	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.05176	mg/L	103.5	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0003	0.0003			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.05		.04921	mg/L	98.4	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.05	U	.04966	mg/L	99.3	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.05	U	.05115	mg/L	102.3	70	130	2.96	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.05368	mg/L	107.4	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0003	0.0003			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00022	0.00022			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.05		.0487	mg/L	97.4	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.05	.0024	.05756	mg/L	110.3	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.05	.0024	.05734	mg/L	109.9	70	130	0.38	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349808													
WG349808ICV	ICV	08/21/13 23:38	MS130717-9	.05		.04657	mg/L	93.1	90	110			
WG349808ICB	ICB	08/21/13 23:42				U	mg/L		-0.0006	0.0006			
WG349808LFB	LFB	08/21/13 23:45	MS130816-3	.0501		.04645	mg/L	92.7	85	115			
L13817-02AS	AS	08/22/13 0:08	MS130816-3	.0501	.0016	.04798	mg/L	92.6	70	130			
L13817-02ASD	ASD	08/22/13 0:12	MS130816-3	.0501	.0016	.05162	mg/L	99.8	70	130	7.31	20	

SPF Water Engineering

ACZ Project ID: ***L13811***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349960													
WG349960ICV	ICV	08/23/13 16:51	MS130717-9	.05		.0484	mg/L	96.8	90	110			
WG349960ICB	ICB	08/23/13 16:55				U	mg/L		-0.0006	0.0006			
WG349795LRB	LRB	08/23/13 16:58				U	mg/L		-0.00044	0.00044			
WG349795LFB	LFB	08/23/13 17:02	MS130816-3	.0501		.04804	mg/L	95.9	85	115			
L13906-03LFM	LFM	08/23/13 18:37	MS130816-3	.0501	U	.0519	mg/L	103.6	70	130			
L13906-03LFMD	LFMD	08/23/13 18:41	MS130816-3	.0501	U	.0529	mg/L	105.6	70	130	1.91	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349526													
WG349526ICV	ICV	08/16/13 1:21	II130729-1	2		1.941	mg/L	97.1	95	105			
WG349526ICB	ICB	08/16/13 1:27				U	mg/L		-0.03	0.03			
WG349526LFB	LFB	08/16/13 1:40	II130716-5	.5		.519	mg/L	103.8	85	115			
L13825-01AS	AS	08/16/13 1:59	II130716-5	.5	.03	.546	mg/L	103.2	85	115			
L13825-01ASD	ASD	08/16/13 2:02	II130716-5	.5	.03	.553	mg/L	104.6	85	115	1.27	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349710													
WG349710ICV	ICV	08/20/13 13:40	II130716-1	2		1.941	mg/L	97.1	95	105			
WG349710ICB	ICB	08/20/13 13:46				U	mg/L		-0.03	0.03			
WG349646LRB	LRB	08/20/13 13:59				U	mg/L		-0.022	0.022			
WG349646LFB	LFB	08/20/13 14:02	II130816-3	.5		.505	mg/L	101	85	115			
L13821-03LFM	LFM	08/20/13 15:13	II130816-3	.5	.02	.523	mg/L	100.6	70	130			
L13821-03LFMD	LFMD	08/20/13 15:16	II130816-3	.5	.02	.523	mg/L	100.6	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L13811***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13811-01	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349749	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349905	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349497	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13811***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13811-02	WG350610	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349749	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349905	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349497	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13811***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13811-03	WG350610	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349749	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349905	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349497	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13811***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13811-04	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349746	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349749	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG349922	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349905	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349759	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349497	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13811
Date Received: 08/13/2013 10:25
Received By: mtb
Date Printed: 8/13/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3306	15.8	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13811

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr Suite 350
Company: SPF Water Engineering	Boise ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208 383 4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: SAME AS ABOVE	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Jason Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MT

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW updated 7-29-13

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quote: SPF-2013-GW
59766	8-8-13 8:52	GW	7	X
59772	8-8-13 10:55	GW	7	X
59760	8-8-13 12:30	GW	7	X
BLM	8-8-13 13:55	GW	7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Quote SPF-2013-GW was updated on 7-29-13 to include nitrate+nitrite. This cooler includes a Mercury transfer that was not used.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	8-9-13 8:40		8.13.13 10:25

L13811 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 28, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13873

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 15, 2013. This project has been assigned to ACZ's project number, L13873. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13873. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 27, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PROD-1

ACZ Sample ID: ***L13873-01***
Date Sampled: *08/13/13 10:55*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	22.5		*	mg/L	0.5	2.5	08/21/13 1:15	tcd
Fluoride	M300.0 - Ion Chromatography	1	1.00		*	mg/L	0.1	0.5	08/21/13 1:15	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/28/13 11:46	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/15/13 23:08	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:49	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	398		*	mg/L	10	20	08/19/13 14:07	bm
Sulfate	M300.0 - Ion Chromatography	1	80.7		*	mg/L	0.5	2.5	08/21/13 1:15	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L13873-02***
Date Sampled: *08/13/13 12:00*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	15.4		*	mg/L	0.5	2.5	08/21/13 1:32	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.47	B	*	mg/L	0.1	0.5	08/21/13 1:32	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.04	BH		mg/L	0.02	0.1	08/28/13 11:46	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.04	BH	*	mg/L	0.02	0.1	08/15/13 22:50	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:50	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	392		*	mg/L	10	20	08/19/13 14:09	bm
Sulfate	M300.0 - Ion Chromatography	1	42.6		*	mg/L	0.5	2.5	08/21/13 1:32	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L13873-03***
Date Sampled: *08/13/13 13:40*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	11.4		*	mg/L	0.5	2.5	08/21/13 1:50	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.34	B	*	mg/L	0.1	0.5	08/21/13 1:50	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.540	H		mg/L	0.02	0.1	08/28/13 11:46	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.54	H	*	mg/L	0.02	0.1	08/15/13 22:51	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	296		*	mg/L	10	20	08/19/13 14:10	bm
Sulfate	M300.0 - Ion Chromatography	1	22.0		*	mg/L	0.5	2.5	08/21/13 1:50	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: SAGEBRUSH DUP

ACZ Sample ID: ***L13873-04***
Date Sampled: *08/13/13 13:50*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	11.4		*	mg/L	0.5	2.5	08/21/13 2:07	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.34	B	*	mg/L	0.1	0.5	08/21/13 2:07	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.550	H		mg/L	0.02	0.1	08/28/13 11:46	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.55	H	*	mg/L	0.02	0.1	08/15/13 22:53	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:53	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	298		*	mg/L	10	20	08/19/13 14:11	bm
Sulfate	M300.0 - Ion Chromatography	1	22.2		*	mg/L	0.5	2.5	08/21/13 2:07	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L13873-05***
Date Sampled: *08/13/13 14:20*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	08/21/13 2:25	tcd
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	08/21/13 2:25	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/28/13 11:47	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/15/13 22:54	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:54	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	22		*	mg/L	10	20	08/19/13 14:14	bm
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	08/21/13 2:25	tcd

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L13873-06***
Date Sampled: *08/13/13 14:30*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	08/21/13 17:15	tcd
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	08/21/13 17:15	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/28/13 11:47	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/15/13 22:55	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:55	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	18	B	*	mg/L	10	20	08/19/13 14:15	bm
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	08/21/13 17:15	tcd

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13873-07***
Date Sampled: *08/13/13 16:40*
Date Received: *08/15/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	9.40		*	mg/L	0.5	2.5	08/21/13 18:25	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.74		*	mg/L	0.1	0.5	08/21/13 18:25	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2			UH		mg/L	0.02	0.1	08/28/13 11:47	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.02	0.1	08/15/13 22:57	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/15/13 22:57	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	368		*	mg/L	10	20	08/19/13 14:16	bm
Sulfate	M300.0 - Ion Chromatography	1	59.5		*	mg/L	0.5	2.5	08/21/13 18:25	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13873***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	30		31.6	mg/L	105.3	90	110			
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	30		31.7	mg/L	105.7	90	110			
L13871-01DUP	DUP	08/20/13 23:12			.79	.78	mg/L				1.3	20	RA
L13871-02AS	AS	08/21/13 0:22	WI130501-1	30	.77	32.9	mg/L	107.1	90	110			
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	30		31.9	mg/L	106.3	90	110			
L13844-01DUP	DUP	08/21/13 16:58			15.5	15.2	mg/L				2	20	RA
L13873-06AS	AS	08/21/13 17:33	WI130501-1	30	U	30.5	mg/L	101.7	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	30		30.7	mg/L	102.3	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	1.5		1.6	mg/L	106.7	90	110			
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	1.5		1.57	mg/L	104.7	90	110			
L13871-01DUP	DUP	08/20/13 23:12			.19	.2	mg/L				5.1	20	RA
L13871-02AS	AS	08/21/13 0:22	WI130501-1	1.5	.19	1.9	mg/L	114	90	110			M1
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	1.5		1.6	mg/L	106.7	90	110			
L13844-01DUP	DUP	08/21/13 16:58			U	U	mg/L				0	20	RA
L13873-06AS	AS	08/21/13 17:33	WI130501-1	1.5	U	1.55	mg/L	103.3	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	1.5		1.52	mg/L	101.3	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349530													
WG349530ICV	ICV	08/15/13 22:32	WI130712-3	2.416		2.394	mg/L	99.1	90	110			
WG349530ICB	ICB	08/15/13 22:33				U	mg/L		-0.06	0.06			
WG349530LFB	LFB	08/15/13 22:37	WI130215-3	2		2.144	mg/L	107.2	90	110			
L13851-01AS	AS	08/15/13 22:40	WI130215-3	2	U	2.106	mg/L	105.3	90	110			
L13851-02DUP	DUP	08/15/13 22:42			.03	U	mg/L				200	20	RA
L13873-06AS	AS	08/15/13 22:56	WI130215-3	2	U	2.043	mg/L	102.2	90	110			
L13873-07DUP	DUP	08/15/13 22:59			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L13873***

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349530													
WG349530ICV	ICV	08/15/13 22:32	WI130712-3	.609		.608	mg/L	99.8	90	110			
WG349530ICB	ICB	08/15/13 22:33				U	mg/L		-0.03	0.03			
WG349530LFB	LFB	08/15/13 22:37	WI130215-3	1		1.103	mg/L	110.3	90	110			
L13851-01AS	AS	08/15/13 22:40	WI130215-3	1	U	1.071	mg/L	107.1	90	110			
L13851-02DUP	DUP	08/15/13 22:42			U	U	mg/L				0	20	RA
L13873-06AS	AS	08/15/13 22:56	WI130215-3	1	U	1.036	mg/L	103.6	90	110			
L13873-07DUP	DUP	08/15/13 22:59			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349667													
L13873-04DUP	DUP	08/19/13 14:13			298	294	mg/L				1.4	10	
L13910-05DUP	DUP	08/19/13 14:27			8380	8360	mg/L				0.2	10	
WG349667LCSW	LCSW	08/19/13 14:28	PCN42846	260		262	mg/L	100.8	80	120			
WG349667PBW	PBW	08/19/13 14:29				14	mg/L		-20	20			

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349726													
WG349726LFB1	LFB	08/20/13 13:52	WI130501-1	30		31.6	mg/L	105.3	90	110			
WG349726LFB2	LFB	08/20/13 22:20	WI130501-1	30		30.9	mg/L	103	90	110			
L13871-01DUP	DUP	08/20/13 23:12			21.5	22.3	mg/L				3.7	20	
L13871-02AS	AS	08/21/13 0:22	WI130501-1	30	22.4	53.8	mg/L	104.7	90	110			
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	30		31.7	mg/L	105.7	90	110			
L13844-01DUP	DUP	08/21/13 16:58			1500	1450	mg/L				3.4	20	
L13873-06AS	AS	08/21/13 17:33	WI130501-1	30	U	30.2	mg/L	100.7	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	30		30	mg/L	100	90	110			

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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-01	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-02	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-03	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-04	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-05	WG349726	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349726	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13873***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13873-06	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13873-07	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349530	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349667	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13873***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13873
Date Received: 08/15/2013 10:25
Received By: mtb
Date Printed: 8/15/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA18186	8.9	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13873

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SHORT-HOLDS-WETCHEM
Prod-1	8/13/13 10:55		1	X
Deposit Stock Tank	8/13/13 12:00		1	X
Sagebrush Spring	8/13/13 13:40		1	X
Sage brush Dup	8/13/13 13:50		1	X
Equipment Blank	8/13/13 14:20		1	X
Transfer Blank	8/13/13 14:30		1	X
Poison Spring	8/13/13 16:40		1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/14/13 7:00		8/15/13 10:20

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13873 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 09, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13920

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 16, 2013. This project has been assigned to ACZ's project number, L13920. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13920. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 09, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

September 09, 2013

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13920

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on August 16, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13920. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

Samples were received outside the EPA recommended temperature of 0-6 degrees C. These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Total Phosphorous data has been qualified with the B1 flag on the extended qualifier report. The chemist noted that the lab reagent blank (0.015 mg/L) and continued calibration blank (0.016 mg/L) both contained concentrations greater than the MDL. Although this is within acceptance criteria, blank results indicate low-level procedural contamination which should be taken into account when assessing results.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PROD-1

ACZ Sample ID: ***L13920-01***
Date Sampled: *08/13/13 10:55*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 13:25	mla
Cyanide, WAD	SM4500-CN I- distillation								08/24/13 13:20	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 15:02	mla
Total Hot Plate Digestion	M200.2 ICP								08/22/13 17:37	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 20:14	pmc

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PROD-1

ACZ Sample ID: ***L13920-01***
Date Sampled: *08/13/13 10:55*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/21/13 13:14	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:22	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/23/13 23:35	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 0:07	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0616			mg/L	0.0002	0.001	08/23/13 23:35	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0598			mg/L	0.0002	0.001	08/28/13 0:07	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/21/13 13:14	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	08/23/13 14:22	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:35	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:07	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:14	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:22	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/21/13 13:14	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/23/13 14:22	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:35	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:07	pmc
Calcium, dissolved	M200.7 ICP	1	11.3			mg/L	0.2	1	08/21/13 13:14	aeb
Calcium, total	M200.7 ICP	1	11.7			mg/L	0.2	1	08/23/13 14:22	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/23/13 23:35	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:07	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	09/05/13 5:42	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:07	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 23:35	pmc
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:07	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:14	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:22	aeb
Iron, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	08/21/13 13:14	aeb
Iron, total	M200.7 ICP	1	0.06			mg/L	0.02	0.05	08/23/13 14:22	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:35	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:07	pmc
Lithium, dissolved	M200.7 ICP	1	0.16			mg/L	0.02	0.1	08/21/13 13:14	aeb
Lithium, total	M200.7 ICP	1	0.16			mg/L	0.02	0.1	08/23/13 14:22	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	08/21/13 13:14	aeb
Magnesium, total	M200.7 ICP	1	0.4	B		mg/L	0.2	1	08/23/13 14:22	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0434			mg/L	0.0005	0.003	08/23/13 23:35	pmc
Manganese, total	M200.8 ICP-MS	1	0.0464			mg/L	0.0005	0.003	08/28/13 0:07	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	08/30/13 16:02	scp
Mercury, total	M1631, Atomic Fluorescence	2	0.5	B	*	ng/L	0.4	1	09/05/13 16:36	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0079			mg/L	0.0005	0.003	08/23/13 23:35	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0083			mg/L	0.0005	0.003	08/28/13 0:07	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/23/13 23:35	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:07	pmc
Potassium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.3	2	08/21/13 13:14	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: PROD-1

ACZ Sample ID: ***L13920-01***
Date Sampled: *08/13/13 10:55*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.6	B		mg/L	0.3	2	08/23/13 14:22	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:14	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:22	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/23/13 23:35	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/28/13 0:07	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:35	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:07	pmc
Sodium, dissolved	M200.7 ICP	1	129			mg/L	0.3	2	08/21/13 13:14	aeb
Sodium, total	M200.7 ICP	1	130			mg/L	0.3	2	08/23/13 14:22	aeb
Strontium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	08/21/13 13:14	aeb
Strontium, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	08/23/13 14:22	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:35	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:07	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 23:35	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:07	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:14	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:22	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:35	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:07	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/23/13 23:35	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/28/13 0:07	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 13:14	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:22	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	186		*	mg/L	2	20	08/18/13 0:00	khw
Carbonate as CaCO3		1	12	B	*	mg/L	2	20	08/18/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/18/13 0:00	khw
Total Alkalinity		1	198		*	mg/L	2	20	08/18/13 0:00	khw
Conductivity @25C	SM2510B	1	639		*	umhos/cm	1	10	08/18/13 1:57	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:44	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/26/13 11:47	mpb
Hardness as CaCO3	SM2340B - Calculation		28			mg/L	1	7	09/09/13 8:44	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/24/13 18:48	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.08	B	*	mg/L	0.05	0.5	08/26/13 15:54	mpb
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	08/18/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	08/18/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	08/23/13 17:13	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 14:48	dcw

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L13920-02***
Date Sampled: *08/13/13 12:00*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 13:36	mla
Cyanide, WAD	SM4500-CN I- distillation								08/24/13 13:28	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 15:13	mla
Total Hot Plate Digestion	M200.2 ICP								08/22/13 18:12	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 20:27	pmc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L13920-02***
Date Sampled: *08/13/13 12:00*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/21/13 13:29	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:38	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/23/13 23:38	pmc
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	08/28/13 0:10	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0330			mg/L	0.0002	0.001	08/23/13 23:38	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0307			mg/L	0.0002	0.001	08/28/13 0:10	pmc
Barium, dissolved	M200.7 ICP	1	0.058			mg/L	0.003	0.02	08/21/13 13:29	aeb
Barium, total	M200.7 ICP	1	0.058			mg/L	0.003	0.02	08/23/13 14:38	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:38	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:10	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:29	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:38	aeb
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	08/21/13 13:29	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	08/23/13 14:38	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:38	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:10	pmc
Calcium, dissolved	M200.7 ICP	1	50.9			mg/L	0.2	1	08/21/13 13:29	aeb
Calcium, total	M200.7 ICP	1	51.9			mg/L	0.2	1	08/23/13 14:38	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/05/13 5:45	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:10	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	09/05/13 5:45	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	08/28/13 0:10	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 23:38	pmc
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:10	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:29	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:38	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:29	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/23/13 14:38	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:38	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:10	pmc
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/21/13 13:29	aeb
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	08/23/13 14:38	aeb
Magnesium, dissolved	M200.7 ICP	1	10.5			mg/L	0.2	1	08/21/13 13:29	aeb
Magnesium, total	M200.7 ICP	1	10.5			mg/L	0.2	1	08/23/13 14:38	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 23:38	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 0:10	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	08/30/13 16:09	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/05/13 16:43	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	08/23/13 23:38	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	08/28/13 0:10	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/23/13 23:38	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:10	pmc
Potassium, dissolved	M200.7 ICP	1	6.2			mg/L	0.3	2	08/21/13 13:29	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L13920-02***
Date Sampled: *08/13/13 12:00*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.2			mg/L	0.3	2	08/23/13 14:38	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:29	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:38	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0057			mg/L	0.0001	0.0003	08/23/13 23:38	pmc
Selenium, total	M200.8 ICP-MS	1	0.0050			mg/L	0.0001	0.0003	08/28/13 0:10	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:38	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:10	pmc
Sodium, dissolved	M200.7 ICP	1	34.4			mg/L	0.3	2	08/21/13 13:29	aeb
Sodium, total	M200.7 ICP	1	34.6			mg/L	0.3	2	08/23/13 14:38	aeb
Strontium, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	08/21/13 13:29	aeb
Strontium, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	08/23/13 14:38	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:38	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:10	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 23:38	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:10	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:29	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:38	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	08/23/13 23:38	pmc
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	08/28/13 0:10	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0483			mg/L	0.0002	0.001	08/23/13 23:38	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0491			mg/L	0.0002	0.001	08/28/13 0:10	pmc
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/21/13 13:29	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	08/23/13 14:38	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	189		*	mg/L	2	20	08/18/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/18/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/18/13 0:00	khw
Total Alkalinity		1	189		*	mg/L	2	20	08/18/13 0:00	khw
Conductivity @25C	SM2510B	1	495		*	umhos/cm	1	10	08/18/13 2:06	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:47	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/26/13 11:48	mpb
Hardness as CaCO3	SM2340B - Calculation		170			mg/L	1	7	09/09/13 8:44	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.04	B	*	mg/L	0.02	0.1	08/24/13 18:49	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 15:56	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/18/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	08/18/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	08/23/13 17:14	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 14:50	dcw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13920-03***
Date Sampled: *08/13/13 16:40*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 13:46	mla
Cyanide, WAD	SM4500-CN I- distillation								08/26/13 15:27	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 15:34	mla
Total Hot Plate Digestion	M200.2 ICP								08/22/13 18:23	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 20:40	pmc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13920-03***
Date Sampled: *08/13/13 16:40*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/21/13 13:32	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:41	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/23/13 23:41	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 0:19	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0352			mg/L	0.0002	0.001	08/23/13 23:41	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0335		*	mg/L	0.0002	0.001	08/28/13 0:19	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/21/13 13:32	aeb
Barium, total	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	08/23/13 14:41	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:41	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:19	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:32	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:41	aeb
Boron, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	08/21/13 13:32	aeb
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	08/23/13 14:41	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:41	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:19	pmc
Calcium, dissolved	M200.7 ICP	1	1.0			mg/L	0.2	1	08/21/13 13:32	aeb
Calcium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	08/23/13 14:41	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/23/13 23:41	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:19	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	09/05/13 5:48	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:19	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/23/13 23:41	pmc
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:19	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:32	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:41	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:32	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/23/13 14:41	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:41	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:19	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 13:32	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/23/13 14:41	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	08/21/13 13:32	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	08/23/13 14:41	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	08/23/13 23:41	pmc
Manganese, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	08/28/13 0:19	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/30/13 16:16	scp
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	09/05/13 16:50	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0160			mg/L	0.0005	0.003	08/23/13 23:41	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0169			mg/L	0.0005	0.003	08/28/13 0:19	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/23/13 23:41	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:19	pmc
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.3	2	08/21/13 13:32	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L13920-03***
Date Sampled: *08/13/13 16:40*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.3	2	08/23/13 14:41	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:32	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:41	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/23/13 23:41	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/28/13 0:19	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/23/13 23:41	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:19	pmc
Sodium, dissolved	M200.7 ICP	1	108			mg/L	0.3	2	08/21/13 13:32	aeb
Sodium, total	M200.7 ICP	1	109			mg/L	0.3	2	08/23/13 14:41	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 13:32	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:41	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:41	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:19	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/23/13 23:41	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:19	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:32	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:41	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/23/13 23:41	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:19	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/23/13 23:41	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0002	0.001	08/28/13 0:19	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 13:32	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:41	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	135		*	mg/L	2	20	08/18/13 0:00	khw
Carbonate as CaCO3		1	51		*	mg/L	2	20	08/18/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/18/13 0:00	khw
Total Alkalinity		1	186		*	mg/L	2	20	08/18/13 0:00	khw
Conductivity @25C	SM2510B	1	504		*	umhos/cm	1	10	08/18/13 2:16	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:48	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 15:38	bsu
Hardness as CaCO3	SM2340B - Calculation		3	B		mg/L	1	7	09/09/13 8:44	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/24/13 18:51	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.08	B	*	mg/L	0.05	0.5	08/26/13 15:58	mpb
pH (lab)	SM4500H+ B									
pH		1	9.1	H	*	units	0.1	0.1	08/18/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	08/18/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	08/23/13 17:16	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 14:52	dcw

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2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L13920-04***
Date Sampled: *08/13/13 14:45*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/05/13 15:19	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13920***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615PBW1	PBW	08/17/13 13:07				U	mg/L		-20	20			
WG349615LCSW2	LCSW	08/17/13 13:20	WC130806-	820.0001		777.9	mg/L	94.9	90	110			
WG349615LCSW5	LCSW	08/17/13 17:01	WC130806-	820.0001		770.3	mg/L	93.9	90	110			
WG349615PBW2	PBW	08/17/13 17:10				3.4	mg/L		-20	20			
WG349615LCSW8	LCSW	08/17/13 20:30	WC130806-	820.0001		788.6	mg/L	96.2	90	110			
WG349615PBW3	PBW	08/17/13 20:38				U	mg/L		-20	20			
WG349615LCSW11	LCSW	08/17/13 23:31	WC130806-	820.0001		793.4	mg/L	96.8	90	110			
WG349615PBW4	PBW	08/17/13 23:40				4.2	mg/L		-20	20			
L13920-03DUP	DUP	08/18/13 2:25			186	167.5	mg/L				10.5	20	
WG349615LCSW14	LCSW	08/18/13 2:38	WC130806-	820.0001		781.5	mg/L	95.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.992	mg/L	99.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.09	0.09			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0011		1.054	mg/L	105.3	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1.0011	U	1.052	mg/L	105.1	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1.0011	U	1.055	mg/L	105.4	85	115	0.28	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.024	mg/L	101.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.09	0.09			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.066	0.066			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0011		1.025	mg/L	102.4	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0011	U	1.014	mg/L	101.3	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0011	U	1.016	mg/L	101.5	70	130	0.2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.02		.02089	mg/L	104.5	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0012	0.0012			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.01		.00988	mg/L	98.8	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.01	U	.01014	mg/L	101.4	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.01	U	.01041	mg/L	104.1	70	130	2.63	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02		.02	mg/L	100	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0012	0.0012			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00088	0.00088			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.01		.01115	mg/L	111.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.01	U	.011	mg/L	110	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.01	U	.01116	mg/L	111.6	70	130	1.44	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05384	mg/L	107.7	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0006	0.0006			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04838	mg/L	96.7	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	.0003	.05458	mg/L	108.5	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	.0003	.05473	mg/L	108.8	70	130	0.27	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05355	mg/L	107.1	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0006	0.0006			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00044	0.00044			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05543	mg/L	110.7	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	.0335	.08502	mg/L	102.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	.0335	.0845	mg/L	101.9	70	130	0.61	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9888	mg/L	99.4	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.009	0.009			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.5015	mg/L	100.3	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	.5	U	.504	mg/L	100.8	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	.5	U	.5059	mg/L	101.2	85	115	0.38	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.9838	mg/L	99.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.009	0.009			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.0066	0.0066			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.4829	mg/L	96.6	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	U	.4852	mg/L	97	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	U	.4845	mg/L	96.9	70	130	0.14	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.0472	mg/L	94.4	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.00015	0.00015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.0501		.04654	mg/L	92.9	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.0501	.00057	.05044	mg/L	99.5	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.0501	.00057	.05027	mg/L	99.2	70	130	0.34	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04686	mg/L	93.7	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.04985	mg/L	99.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	U	.05454	mg/L	108.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	U	.05519	mg/L	110.2	70	130	1.18	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.955	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.12	0.12			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.987	mg/L	98.7	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1	U	.974	mg/L	97.4	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1	U	1.007	mg/L	100.7	85	115	3.33	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.04	mg/L	102	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.12	0.12			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.088	0.088			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.992	mg/L	99.2	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	1.012	mg/L	101.2	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	1.008	mg/L	100.8	70	130	0.4	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.016	mg/L	100.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				.013	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5005		.52	mg/L	103.9	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	.5005	.11	.623	mg/L	102.5	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	.5005	.11	.632	mg/L	104.3	85	115	1.43	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.007	mg/L	100.4	95	105			
WG349940ICB	ICB	08/23/13 13:11				.012	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5005		.502	mg/L	100.3	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5005	.11	.601	mg/L	98.1	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5005	.11	.602	mg/L	98.3	70	130	0.17	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05161	mg/L	103.2	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.0501		.04949	mg/L	98.8	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.0501	.0012	.05262	mg/L	102.6	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.0501	.0012	.05235	mg/L	102.1	70	130	0.51	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05104	mg/L	102.1	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.05154	mg/L	102.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	U	.05141	mg/L	102.6	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	U	.05141	mg/L	102.6	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.3	mg/L	99.3	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	68.0028		70.15	mg/L	103.2	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	68.0028	11.3	80.99	mg/L	102.5	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	68.0028	11.3	82.13	mg/L	104.2	85	115	1.4	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		99.24	mg/L	99.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.6	0.6			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.44	0.44			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	68.0028		69.45	mg/L	102.1	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	68.0028	11.7	80.36	mg/L	101	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	68.0028	11.7	79.87	mg/L	100.2	70	130	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.04987	mg/L	99.7	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0015	0.0015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04853	mg/L	97	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	U	.05004	mg/L	100	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	U	.04979	mg/L	99.5	70	130	0.5	20	
WG350508													
WG350508ICV	ICV	09/05/13 5:00	MS130717-9	.05		.05073	mg/L	101.5	90	110			
WG350508ICB	ICB	09/05/13 5:03				U	mg/L		-0.0015	0.0015			
WG350508LFB	LFB	09/05/13 5:06	MS130816-3	.05005		.05166	mg/L	103.2	85	115			
L13863-01AS	AS	09/05/13 5:19	MS130816-3	.05005	U	.05114	mg/L	102.2	70	130			
L13863-01ASD	ASD	09/05/13 5:22	MS130816-3	.05005	U	.05385	mg/L	107.6	70	130	5.16	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04942	mg/L	98.8	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05001	mg/L	99.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04748	mg/L	94.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04682	mg/L	93.5	70	130	1.4	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350508													
WG350508ICV	ICV	09/05/13 5:00	MS130717-9	.05		.04952	mg/L	99	90	110			
WG350508ICB	ICB	09/05/13 5:03				U	mg/L		-0.00015	0.00015			
WG350508LFB	LFB	09/05/13 5:06	MS130816-3	.05005		.05161	mg/L	103.1	85	115			
L13863-01AS	AS	09/05/13 5:19	MS130816-3	.05005	.00025	.04979	mg/L	99	70	130			
L13863-01ASD	ASD	09/05/13 5:22	MS130816-3	.05005	.00025	.04995	mg/L	99.3	70	130	0.32	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04932	mg/L	98.6	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05165	mg/L	103.2	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05144	mg/L	102.8	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05131	mg/L	102.5	70	130	0.25	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615LCSW1	LCSW	08/17/13 13:08	PCN42819	1408.8		1454.9	umhos/cm	103.3	90	110			
WG349615LCSW4	LCSW	08/17/13 16:50	PCN42819	1408.8		1434.4	umhos/cm	101.8	90	110			
WG349615LCSW7	LCSW	08/17/13 20:18	PCN42819	1408.8		1417.1	umhos/cm	100.6	90	110			
WG349615LCSW10	LCSW	08/17/13 23:19	PCN42819	1408.8		1408.9	umhos/cm	100	90	110			
L13920-03DUP	DUP	08/18/13 2:25			504	506	umhos/cm				0.4	20	
WG349615LCSW13	LCSW	08/18/13 2:27	PCN42819	1408.8		1393.6	umhos/cm	98.9	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05077	mg/L	101.5	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0015	0.0015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.0484	mg/L	96.7	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	.0047	.05498	mg/L	100.5	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	.0047	.05476	mg/L	100	70	130	0.4	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05025	mg/L	100.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				.00819	mg/L		-0.0011	0.0011			BF
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05022	mg/L	100.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.0451	mg/L	90.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04524	mg/L	90.4	70	130	0.31	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349918													
WG349918ICV	ICV	08/22/13 22:44	WI130822-6	.3		.28	mg/L	93.3	90	110			
WG349918ICB	ICB	08/22/13 22:45				U	mg/L		-0.003	0.003			
WG349920													
WG349855LRB	LRB	08/22/13 23:26				U	mg/L		-0.003	0.003			
WG349855LFB	LFB	08/22/13 23:26	WI130822-2	.2		.1961	mg/L	98.1	90	110			
L13910-04DUP	DUP	08/22/13 23:41			U	U	mg/L				0	20	RA
L13910-05LFM	LFM	08/22/13 23:42	WI130822-2	.2	U	.1815	mg/L	90.8	90	110			

SPF Water Engineering

ACZ Project ID: ***L13920***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350058													
WG350058ICV	ICV	08/26/13 11:01	WI130822-6	.3		.295	mg/L	98.3	90	110			
WG350058ICB	ICB	08/26/13 11:02				U	mg/L		-0.003	0.003			
WG350062													
WG350005LRB	LRB	08/26/13 11:42				U	mg/L		-0.003	0.003			
WG350005LFB	LFB	08/26/13 11:43	WI130822-4	.2		.1991	mg/L	99.6	90	110			
L13570-02DUP	DUP	08/26/13 11:44			U	U	mg/L				0	20	RA
L13911-01LFM	LFM	08/26/13 11:46	WI130822-4	.2	U	.1804	mg/L	90.2	90	110			
WG350164													
WG350164ICV	ICV	08/27/13 15:29	WI130822-6	.3		.291	mg/L	97	90	110			
WG350164ICB	ICB	08/27/13 15:30				U	mg/L		-0.003	0.003			
WG350083LRB	LRB	08/27/13 15:31				U	mg/L		-0.003	0.003			
WG350083LFB	LFB	08/27/13 15:32	WI130822-4	.2		.1934	mg/L	96.7	90	110			
L13906-01DUP	DUP	08/27/13 15:34			U	U	mg/L				0	20	RA
L13906-02LFM	LFM	08/27/13 15:35	WI130822-4	.2	U	.1687	mg/L	84.4	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.96	mg/L	98	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		1	mg/L	100	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1	U	.98	mg/L	98	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1	U	.99	mg/L	99	85	115	1.02	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.04	mg/L	102	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.3	0.3			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.22	0.22			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		1.01	mg/L	101	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	.99	mg/L	99	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	1	mg/L	100	70	130	1.01	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.989	mg/L	99.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0014		1.012	mg/L	101.1	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1.0014	.04	1.061	mg/L	102	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1.0014	.04	1.064	mg/L	102.3	85	115	0.28	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.997	mg/L	99.9	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.06	0.06			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.044	0.044			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0014		1.029	mg/L	102.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0014	.06	1.056	mg/L	99.5	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0014	.06	1.043	mg/L	98.2	70	130	1.24	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05218	mg/L	104.4	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04873	mg/L	97.4	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	.0001	.05009	mg/L	99.9	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	.0001	.05034	mg/L	100.4	70	130	0.5	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05176	mg/L	103.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.04992	mg/L	99.7	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.0508	mg/L	101.5	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.0508	mg/L	101.5	70	130	0	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.984	mg/L	99.2	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.977	mg/L	97.7	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1	.16	1.114	mg/L	95.4	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1	.16	1.116	mg/L	95.6	85	115	0.18	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.004	mg/L	100.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.06	0.06			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.044	0.044			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.963	mg/L	96.3	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	.16	1.124	mg/L	96.4	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	.16	1.124	mg/L	96.4	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		97.78	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	49.99752		49.64	mg/L	99.3	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	49.99752	U	49.73	mg/L	99.5	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	49.99752	U	50.52	mg/L	101	85	115	1.58	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		97.14	mg/L	97.1	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.6	0.6			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.44	0.44			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	49.99752		48.75	mg/L	97.5	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	49.99752	.4	48.31	mg/L	95.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	49.99752	.4	48.01	mg/L	95.2	70	130	0.62	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.04966	mg/L	99.3	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0015	0.0015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.0494	mg/L	98.7	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	1.1	1.145	mg/L	89.9	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	1.1	1.151	mg/L	101.9	70	130	0.52	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04999	mg/L	100	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05121	mg/L	102.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	.0009	.05216	mg/L	102.4	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	.0009	.05199	mg/L	102.1	70	130	0.33	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350216													
WG350216ICV	ICV	08/29/13 12:32	HG130725-7	10		9.05	ng/L	90.5	79	121			
WG350216ICB	ICB	08/29/13 12:38				U	ng/L		-0.5	0.5			
WG350216ICV2	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350216ICB2	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322													
WG350322ICV	ICV	08/30/13 9:44	HG130725-7	10		9.89	ng/L	98.9	79	121			
WG350322ICB	ICB	08/30/13 9:51				U	ng/L		-0.5	0.5			
WG350322PQV	PQV	08/30/13 9:58	HG130725-8	.5		.6	ng/L	120	70	130			
WG350322CCV1	CCV	08/30/13 12:52	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350322CCB1	CCB	08/30/13 12:59				U	ng/L		-0.5	0.5			
WG350322LFB	LFB	08/30/13 13:06	HG130725-9	2		1.85	ng/L	92.5	71	125			
WG350322CCV2	CCV	08/30/13 14:17	HG130725-7	10		9.58	ng/L	95.8	76.5	123.4			
WG350322CCB2	CCB	08/30/13 14:24				U	ng/L		-0.5	0.5			
L13796-04MS	MS	08/30/13 14:59	HG130725-9	2	.3	1.91	ng/L	80.5	71	125			
L13796-04MSD	MSD	08/30/13 15:06	HG130725-9	2	.3	1.84	ng/L	77	71	125	3.73	24	
WG350322CCV3	CCV	08/30/13 15:13	HG130725-7	10		8.82	ng/L	88.2	76.5	123.4			
WG350322CCB3	CCB	08/30/13 15:20				U	ng/L		-0.5	0.5			
WG350322CCV4	CCV	08/30/13 16:23	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350322CCB4	CCB	08/30/13 16:30				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350543													
WG350543ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350543ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350655													
WG350655CCV1	CCV	09/05/13 9:37	HG130725-7	10		9.4	ng/L	94	76.5	123.4			
WG350655CCB1	CCB	09/05/13 9:44				U	ng/L		-0.5	0.5			
WG350655PQV	PQV	09/05/13 9:51	HG130725-8	.5		.45	ng/L	90	70	130			
WG350655CCV2	CCV	09/05/13 14:41	HG130725-7	10		8.78	ng/L	87.8	76.5	123.4			
WG350655CCB2	CCB	09/05/13 14:49				U	ng/L		-0.5	0.5			
WG350655LFB	LFB	09/05/13 15:05	HG130725-9	2		1.59	ng/L	79.5	71	125			
WG350655CCV3	CCV	09/05/13 16:01	HG130725-7	10		9.16	ng/L	91.6	76.5	123.4			
WG350655CCB3	CCB	09/05/13 16:08				U	ng/L		-0.5	0.5			
L13884-01MS	MS	09/05/13 16:22	HG5XPREP	50	7	14.6	ng/L	76	71	125			
L13884-01MSD	MSD	09/05/13 16:29	HG5XPREP	50	7	14.6	ng/L	76	71	125	0	24	
WG350655CCV4	CCV	09/05/13 16:57	HG130725-7	10		8.71	ng/L	87.1	76.5	123.4			
WG350655CCB4	CCB	09/05/13 17:04				U	ng/L		-0.5	0.5			
WG350655CCV5	CCV	09/05/13 17:53	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350655CCB5	CCB	09/05/13 18:00				U	ng/L		-0.5	0.5			
WG350655CCV6	CCV	09/05/13 18:42	HG130725-7	10		8.77	ng/L	87.7	76.5	123.4			
WG350655CCB6	CCB	09/05/13 18:49				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L13920***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.02006		.0203	mg/L	101.2	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0015	0.0015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05		.04941	mg/L	98.8	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05	U	.04979	mg/L	99.6	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05	U	.05011	mg/L	100.2	70	130	0.64	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02006		.01995	mg/L	99.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05		.05101	mg/L	102	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05	.0169	.06872	mg/L	103.6	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05	.0169	.06931	mg/L	104.8	70	130	0.85	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05087	mg/L	101.7	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0018	0.0018			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04819	mg/L	96.3	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	.0165	.06606	mg/L	99	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	.0165	.06539	mg/L	97.7	70	130	1.02	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05038	mg/L	100.8	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0018	0.0018			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00132	0.00132			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.04994	mg/L	99.8	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04518	mg/L	90.3	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04508	mg/L	90.1	70	130	0.22	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350007													
WG350007ICV	ICV	08/24/13 14:35	WI130712-3	2.416		2.49	mg/L	103.1	90	110			
WG350007ICB	ICB	08/24/13 14:36				U	mg/L		-0.06	0.06			
WG350009													
WG350009LFB1	LFB	08/24/13 18:13	WI130816-3	2		1.99	mg/L	99.5	90	110			
WG350009LFB2	LFB	08/24/13 18:47	WI130816-3	2		2.003	mg/L	100.2	90	110			
L13922-01AS	AS	08/24/13 18:55	WI130816-3	2	1.93	3.959	mg/L	101.5	90	110			
L13922-02DUP	DUP	08/24/13 18:58			2.03	2.026	mg/L				0.2	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350066													
WG350066ICV	ICV	08/26/13 13:15	WI121105-5	1.003		1.003	mg/L	100	90	110			
WG350066ICB	ICB	08/26/13 13:18				U	mg/L		-0.15	0.15			
WG350081													
WG350081LFB1	LFB	08/26/13 15:24	WI121218-3	1		.977	mg/L	97.7	90	110			
L13907-02AS	AS	08/26/13 15:41	WI121218-3	1	U	1.016	mg/L	101.6	90	110			
L13907-03DUP	DUP	08/26/13 15:43			2.67	2.69	mg/L				0.7	20	
WG350081LFB2	LFB	08/26/13 15:55	WI121218-3	1		1.041	mg/L	104.1	90	110			
L13920-02AS	AS	08/26/13 15:57	WI121218-3	1	U	1.039	mg/L	103.9	90	110			
L13920-03DUP	DUP	08/26/13 16:00			.08	.102	mg/L				24.2	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349615													
WG349615LCSW3	LCSW	08/17/13 13:24	PCN41777	6		6.02	units	100.3	98	102			
WG349615LCSW6	LCSW	08/17/13 17:05	PCN41777	6		6.03	units	100.5	98	102			
WG349615LCSW9	LCSW	08/17/13 20:33	PCN41777	6		6.03	units	100.5	98	102			
WG349615LCSW12	LCSW	08/17/13 23:35	PCN41777	6		6.03	units	100.5	98	102			
L13920-03DUP	DUP	08/18/13 2:25			9.1	9.17	units				0.8	20	
WG349615LCSW15	LCSW	08/18/13 2:42	PCN41777	6		6.03	units	100.5	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349964													
WG349964ICV	ICV	08/23/13 15:46	WI130725-8	.65228		.617	mg/L	94.6	90	110			
WG349964ICB	ICB	08/23/13 15:47				.017	mg/L		-0.03	0.03			
WG349983													
WG349873LRB	LRB	08/23/13 16:57				.015	mg/L		-0.03	0.03			B1
WG349873LFB	LFB	08/23/13 16:58	WI130821-2	.5		.476	mg/L	95.2	90	110			
L13901-01LFM	LFM	08/23/13 17:03	WI130821-2	.5	.02	.473	mg/L	90.6	90	110			
L13918-01DUP	DUP	08/23/13 17:05			.02	.021	mg/L				4.9	20	RA
L13920-02LFM	LFM	08/23/13 17:15	WI130821-2	.5	.03	.488	mg/L	91.6	90	110			
L13920-03DUP	DUP	08/23/13 17:17			.03	.031	mg/L				3.3	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	20		19.82	mg/L	99.1	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	99.96112		102.3	mg/L	102.3	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	99.96112	.5	101.9	mg/L	101.4	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	99.96112	.5	103	mg/L	102.5	85	115	1.07	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	20		19.89	mg/L	99.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.9	0.9			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.66	0.66			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	99.96112		98.72	mg/L	98.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	99.96112	.6	98.61	mg/L	98	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	99.96112	.6	98.24	mg/L	97.7	70	130	0.38	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349733													
WG349733PBW	PBW	08/20/13 14:15				U	mg/L		-6	6			
WG349733LCSW	LCSW	08/20/13 14:16	PCN42846	160		164	mg/L	102.5	80	120			
L13932-03DUP	DUP	08/20/13 14:59			76	75	mg/L				1.3	10	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.94	mg/L	97	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0009		.98	mg/L	97.9	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1.0009	U	.98	mg/L	97.9	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1.0009	U	.98	mg/L	97.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.01	mg/L	100.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.3	0.3			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.22	0.22			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0009		1.01	mg/L	100.9	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05136	mg/L	102.7	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04801	mg/L	95.9	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	U	.053	mg/L	105.9	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	U	.05359	mg/L	107.1	70	130	1.11	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05166	mg/L	103.3	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05229	mg/L	104.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04611	mg/L	92.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04554	mg/L	91	70	130	1.24	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.02002		.0188	mg/L	93.9	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.00015	0.00015			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.01001		.008918	mg/L	89.1	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.01001	U	.009045	mg/L	90.4	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.01001	U	.009005	mg/L	90	70	130	0.44	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02002		.01931	mg/L	96.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.01001		.009537	mg/L	95.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.01001	U	.009214	mg/L	92	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.01001	U	.009259	mg/L	92.5	70	130	0.49	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.79	mg/L	99.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	100.0495		101	mg/L	101	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	100.0495	129	223.5	mg/L	94.5	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	100.0495	129	225.3	mg/L	96.3	85	115	0.8	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		99.47	mg/L	99.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.9	0.9			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.66	0.66			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	100.0495		98.55	mg/L	98.5	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	100.0495	130	229	mg/L	99	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	100.0495	130	227.2	mg/L	97.2	70	130	0.79	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.01	mg/L	100.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.504	mg/L	100.8	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	.5	.04	.535	mg/L	99	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	.5	.04	.54	mg/L	100	85	115	0.93	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.009	mg/L	100.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.489	mg/L	97.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	.04	.523	mg/L	96.6	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	.04	.521	mg/L	96.2	70	130	0.38	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05334	mg/L	106.7	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04962	mg/L	99.1	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	U	.05131	mg/L	102.5	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	U	.0512	mg/L	102.3	70	130	0.21	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05296	mg/L	105.9	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05071	mg/L	101.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05162	mg/L	103.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05168	mg/L	103.3	70	130	0.12	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05015		.05286	mg/L	105.4	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05005		.04938	mg/L	98.7	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05005	U	.04957	mg/L	99	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05005	U	.04968	mg/L	99.3	70	130	0.22	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05015		.05197	mg/L	103.6	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05102	mg/L	101.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05109	mg/L	102.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05142	mg/L	102.7	70	130	0.64	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9705	mg/L	98.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.015	0.015			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.9932	mg/L	99.3	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	1	U	.991	mg/L	99.1	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	1	U	.9947	mg/L	99.5	85	115	0.37	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.9758	mg/L	98.8	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.015	0.015			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.011	0.011			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.99	mg/L	99	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	.978	mg/L	97.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	.9752	mg/L	97.5	70	130	0.29	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.05222	mg/L	104.4	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0003	0.0003			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.05		.04929	mg/L	98.6	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.05	.0002	.05024	mg/L	100.1	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.05	.0002	.05056	mg/L	100.7	70	130	0.63	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05247	mg/L	104.9	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05		.05041	mg/L	100.8	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05	U	.05222	mg/L	104.4	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05	U	.05226	mg/L	104.5	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L13920***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349921													
WG349921ICV	ICV	08/23/13 23:25	MS130717-9	.05		.04923	mg/L	98.5	90	110			
WG349921ICB	ICB	08/23/13 23:28				U	mg/L		-0.0006	0.0006			
WG349921LFB	LFB	08/23/13 23:32	MS130816-3	.0501		.04894	mg/L	97.7	85	115			
L13871-01AS	AS	08/24/13 0:39	MS130816-3	.0501	.0074	.05793	mg/L	100.9	70	130			
L13871-01ASD	ASD	08/24/13 0:42	MS130816-3	.0501	.0074	.05798	mg/L	101	70	130	0.09	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04872	mg/L	97.4	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0006	0.0006			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00044	0.00044			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.05026	mg/L	100.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	.0005	.05005	mg/L	98.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	.0005	.04954	mg/L	97.9	70	130	1.02	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.971	mg/L	98.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.52	mg/L	104	85	115			
L13920-01AS	AS	08/21/13 13:17	II130816-3	.5	U	.521	mg/L	104.2	85	115			
L13920-01ASD	ASD	08/21/13 13:26	II130816-3	.5	U	.53	mg/L	106	85	115	1.71	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.953	mg/L	97.7	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.516	mg/L	103.2	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	U	.504	mg/L	100.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	U	.501	mg/L	100.2	70	130	0.6	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13920***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13920-01	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350655	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350062	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350009	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349733	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13920***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13920-02	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350655	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350062	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350009	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349733	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L13920***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13920-03	WG350160	Arsenic, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350655	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG349615	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350164	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350009	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349615	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349733	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
	WG349615	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13920
Date Received: 08/16/2013 10:11
Received By: mtb
Date Printed: 8/16/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the remarks section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3101	14.6	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L13920

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2013-GW	Trip Blank Analysis
Prod-1	8/13/13 10:55		7	X	
Deposit Stock Tank	8/13/13 12:00		7	X	
Poisan Spring	8/13/13 16:40		7	X	
Mercury Trip Blank	8/13/13 14:45		1		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

~~single extra mercury bottle included (not used)~~

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/14/13 7:00		8/16/13 10:11

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13920 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 26, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13923

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 16, 2013. This project has been assigned to ACZ's project number, L13923. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13923. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 25, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SOURDOUGH SPRING LOW

ACZ Sample ID: ***L13923-01***
Date Sampled: *08/14/13 12:00*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	6.75		*	mg/L	0.5	2.5	08/22/13 2:53	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.26	B	*	mg/L	0.1	0.5	08/22/13 2:53	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.77	H		mg/L	0.02	0.1	08/26/13 11:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.77	H	*	mg/L	0.02	0.1	08/16/13 20:22	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/16/13 20:22	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	262		*	mg/L	10	20	08/21/13 11:34	khw
Sulfate	M300.0 - Ion Chromatography	1	23.9		*	mg/L	0.5	2.5	08/22/13 2:53	tcd

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13923-02***
Date Sampled: *08/14/13 13:55*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	6.74		*	mg/L	0.5	2.5	08/22/13 3:11	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.72		*	mg/L	0.1	0.5	08/22/13 3:11	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.12	H		mg/L	0.02	0.1	08/26/13 11:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.12	H	*	mg/L	0.02	0.1	08/16/13 20:23	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/16/13 20:23	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	426		*	mg/L	10	20	08/21/13 11:37	khw
Sulfate	M300.0 - Ion Chromatography	5	123		*	mg/L	2.5	12.5	08/22/13 12:06	tcd

** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L13923-03***
Date Sampled: *08/14/13 15:15*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	10.8		*	mg/L	0.5	2.5	08/22/13 3:28	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.62		*	mg/L	0.1	0.5	08/22/13 3:28	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.040	H		mg/L	0.02	0.1	08/26/13 11:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	2.04	H	*	mg/L	0.02	0.1	08/16/13 20:24	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/16/13 20:24	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	330		*	mg/L	10	20	08/21/13 11:39	khw
Sulfate	M300.0 - Ion Chromatography	1	46.3		*	mg/L	0.5	2.5	08/22/13 3:28	tcd

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L13923-04***
Date Sampled: *08/14/13 16:00*
Date Received: *08/16/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1	8.41		*	mg/L	0.5	2.5	08/22/13 3:46	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.60		*	mg/L	0.1	0.5	08/22/13 3:46	tcd
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.180	H		mg/L	0.02	0.1	08/26/13 11:09	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.18	H	*	mg/L	0.02	0.1	08/16/13 20:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	08/16/13 20:25	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	330		*	mg/L	10	20	08/21/13 11:42	khw
Sulfate	M300.0 - Ion Chromatography	1	43.2		*	mg/L	0.5	2.5	08/22/13 3:46	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13923***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	19.98		20.3	mg/L	101.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	30		31.9	mg/L	106.3	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	30		30.7	mg/L	102.3	90	110			
L13912-07DUP	DUP	08/22/13 0:15			1.2	1.18	mg/L				1.7	20	RA
L13912-08AS	AS	08/22/13 1:26	WI130501-1	30	3.17	35.1	mg/L	106.4	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	4.004		4.19	mg/L	104.6	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-0.3	0.3			
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	1.5		1.6	mg/L	106.7	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	1.5		1.52	mg/L	101.3	90	110			
L13912-07DUP	DUP	08/22/13 0:15			U	U	mg/L				0	20	RA
L13912-08AS	AS	08/22/13 1:26	WI130501-1	1.5	U	1.61	mg/L	107.3	90	110			

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349602													
WG349602ICV	ICV	08/16/13 19:35	WI130712-3	2.416		2.473	mg/L	102.4	90	110			
WG349602ICB	ICB	08/16/13 19:36				U	mg/L		-0.06	0.06			
WG349602LFB1	LFB	08/16/13 19:40	WI130816-3	2		2.012	mg/L	100.6	90	110			
WG349602LFB2	LFB	08/16/13 20:14	WI130816-3	2		2.009	mg/L	100.5	90	110			
L13918-05AS	AS	08/16/13 20:16	WI130816-3	2	.17	2.226	mg/L	102.8	90	110			
L13918-07DUP	DUP	08/16/13 20:21			.39	.383	mg/L				1.8	20	

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349602													
WG349602ICV	ICV	08/16/13 19:35	WI130712-3	.609		.612	mg/L	100.5	90	110			
WG349602ICB	ICB	08/16/13 19:36				U	mg/L		-0.03	0.03			
WG349602LFB1	LFB	08/16/13 19:40	WI130816-3	1		1.015	mg/L	101.5	90	110			
WG349602LFB2	LFB	08/16/13 20:14	WI130816-3	1		1.012	mg/L	101.2	90	110			
L13918-05AS	AS	08/16/13 20:16	WI130816-3	1	U	1.041	mg/L	104.1	90	110			
L13918-07DUP	DUP	08/16/13 20:21			U	U	mg/L				0	20	RA

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349784													
WG349784PBW	PBW	08/21/13 10:45				24	mg/L		-20	20			B7
WG349784LCSW	LCSW	08/21/13 10:47	PCN42847	260		280	mg/L	107.7	80	120			
L13923-04DUP	DUP	08/21/13 11:45			330	332	mg/L				0.6	10	

SPF Water Engineering

ACZ Project ID: ***L13923***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG346168													
WG346168ICV	ICV	06/24/13 18:44	WI130624-1	50		50.2	mg/L	100.4	90	110			
WG346168ICB	ICB	06/24/13 19:01				U	mg/L		-1.5	1.5			
WG349785													
WG349785LFB1	LFB	08/21/13 15:13	WI130501-1	30		31.7	mg/L	105.7	90	110			
WG349785LFB2	LFB	08/21/13 23:40	WI130501-1	30		30	mg/L	100	90	110			
L13912-07DUP	DUP	08/22/13 0:15			17.1	16.8	mg/L				1.8	20	
L13912-08AS	AS	08/22/13 1:26	WI130501-1	30	16.1	47.6	mg/L	105	90	110			

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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L13923***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13923-01	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349602	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349784	Residue, Filterable (TDS) @180C	SM2540C	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13923-02	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349602	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349784	Residue, Filterable (TDS) @180C	SM2540C	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

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Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L13923***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13923-03	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349602	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349784	Residue, Filterable (TDS) @180C	SM2540C	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
L13923-04	WG349785	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349602	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349784	Residue, Filterable (TDS) @180C	SM2540C	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540C	Q6	Sample was received above recommended temperature.
			SM2540C	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG349785	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.

Certification Qualifiers

SPF Water Engineering ACZ Project ID: ***L13923***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
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Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13923
Date Received: 08/16/2013 10:03
Received By: mtb
Date Printed: 8/19/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the sample information section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA18201	15.8	11	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13923

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name: SAME	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SHORT-HOLDS-WETCHEM

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SHORT-HOLDS-WETCHEM
Sourdough Spring Lower	8/14/13 12:00		1	X
Whiskey Spring	8/14/13 13:55		1	X
Twin Spring, South	8/14/13 15:15		1	X
Twin Spring, North	8/14/13 16:00		1	X
~~Mercury Trip Blank~~	8/ (ES)			

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/15/13 9:00	[illegible]	8/16/13 10:00

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13923 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 13, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13939

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 19, 2013. This project has been assigned to ACZ's project number, L13939. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13939. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 13, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

September 13, 2013

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13939

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on August 19, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13939. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

Samples were received outside the EPA recommended temperature of 0-6 degrees C. These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Total Phosphorous data has been qualified with the B1 flag on the extended qualifier report. The chemist noted that the lab reagent blank (0.015 mg/L) and continued calibration blank (0.016 mg/L) both contained concentrations greater than the MDL. Although this is within acceptance criteria, blank results indicate low-level procedural contamination which should be taken into account when assessing results.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SOURDOUGH SPRING LOW

ACZ Sample ID: ***L13939-01***
Date Sampled: *08/14/13 12:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/10/13 14:12	mla
Cyanide, WAD	SM4500-CN I- distillation								08/27/13 12:00	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 15:55	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 21:20	pmc
Total Hot Plate Digestion	M200.2 ICP								08/22/13 18:35	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SOURDOUGH SPRING LOW

ACZ Sample ID: ***L13939-01***
Date Sampled: *08/14/13 12:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/21/13 13:35	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:44	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:06	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 0:29	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0232			mg/L	0.0002	0.001	08/27/13 1:06	msh
Arsenic, total	M200.8 ICP-MS	1	0.0227		*	mg/L	0.0002	0.001	08/28/13 0:29	pmc
Barium, dissolved	M200.7 ICP	1	0.087			mg/L	0.003	0.02	08/21/13 13:35	aeb
Barium, total	M200.7 ICP	1	0.087			mg/L	0.003	0.02	08/23/13 14:44	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:06	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:29	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:35	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:44	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	08/21/13 13:35	aeb
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	08/23/13 14:44	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:06	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:29	pmc
Calcium, dissolved	M200.7 ICP	1	22.6		*	mg/L	0.2	1	08/21/13 13:35	aeb
Calcium, total	M200.7 ICP	1	22.8			mg/L	0.2	1	08/23/13 14:44	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/27/13 1:06	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:29	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	08/27/13 1:06	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:29	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:06	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:29	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:35	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:44	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:35	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/23/13 14:44	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:06	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:29	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 13:35	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/23/13 14:44	aeb
Magnesium, dissolved	M200.7 ICP	1	4.9			mg/L	0.2	1	08/21/13 13:35	aeb
Magnesium, total	M200.7 ICP	1	5.0			mg/L	0.2	1	08/23/13 14:44	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:06	msh
Manganese, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	08/28/13 0:29	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	10		U	*	ng/L	2	5	09/11/13 11:40	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/05/13 17:25	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	08/27/13 1:06	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0005	0.003	08/28/13 0:29	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:06	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:29	pmc
Potassium, dissolved	M200.7 ICP	1	2.7			mg/L	0.3	2	08/21/13 13:35	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SOURDOUGH SPRING LOW

ACZ Sample ID: ***L13939-01***
Date Sampled: *08/14/13 12:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	2.7			mg/L	0.3	2	08/23/13 14:44	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:35	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:44	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	08/27/13 1:06	msh
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	08/28/13 0:29	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:06	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:29	pmc
Sodium, dissolved	M200.7 ICP	1	34.2			mg/L	0.3	2	08/21/13 13:35	aeb
Sodium, total	M200.7 ICP	1	33.9			mg/L	0.3	2	08/23/13 14:44	aeb
Strontium, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	08/21/13 13:35	aeb
Strontium, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	08/23/13 14:44	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:06	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:29	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:06	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:29	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:35	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:44	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0049			mg/L	0.0001	0.0005	08/27/13 1:06	msh
Uranium, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	08/28/13 0:29	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0162			mg/L	0.0002	0.001	08/27/13 1:06	msh
Vanadium, total	M200.8 ICP-MS	1	0.0165			mg/L	0.0002	0.001	08/28/13 0:29	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/21/13 13:35	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:44	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	119		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	119		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	300		*	umhos/cm	1	10	08/20/13 22:59	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	09/10/13 17:37	mla
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 17:32	bsu
Hardness as CaCO3	SM2340B - Calculation		77			mg/L	1	7	09/13/13 11:14	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.73		*	mg/L	0.02	0.1	08/28/13 23:09	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:04	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	23.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/23/13 17:18	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 9:51	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13939-02***
Date Sampled: *08/14/13 13:55*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/10/13 14:20	mla
Cyanide, WAD	SM4500-CN I- distillation								08/27/13 12:08	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:06	mla
Total Hot Plate Digestion	M200.2 ICP								08/22/13 18:46	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 21:33	pmc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13939-02***
Date Sampled: *08/14/13 13:55*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/21/13 13:38	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:47	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	08/27/13 1:09	msh
Antimony, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	08/28/13 0:32	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0854			mg/L	0.0002	0.001	08/27/13 1:09	msh
Arsenic, total	M200.8 ICP-MS	1	0.0867		*	mg/L	0.0002	0.001	08/28/13 0:32	pmc
Barium, dissolved	M200.7 ICP	1	0.046			mg/L	0.003	0.02	08/21/13 13:38	aeb
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	08/23/13 14:47	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:09	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:32	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:38	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:47	aeb
Boron, dissolved	M200.7 ICP	1	0.19			mg/L	0.01	0.05	08/21/13 13:38	aeb
Boron, total	M200.7 ICP	1	0.19			mg/L	0.01	0.05	08/23/13 14:47	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:09	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:32	pmc
Calcium, dissolved	M200.7 ICP	1	35.3		*	mg/L	0.2	1	08/21/13 13:38	aeb
Calcium, total	M200.7 ICP	1	35.9			mg/L	0.2	1	08/23/13 14:47	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/27/13 1:09	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:32	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	08/27/13 1:09	msh
Cobalt, total	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	08/28/13 0:32	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:09	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:32	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:38	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:47	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:38	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/23/13 14:47	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:09	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:32	pmc
Lithium, dissolved	M200.7 ICP	1	0.10			mg/L	0.02	0.1	08/21/13 13:38	aeb
Lithium, total	M200.7 ICP	1	0.11			mg/L	0.02	0.1	08/23/13 14:47	aeb
Magnesium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	08/21/13 13:38	aeb
Magnesium, total	M200.7 ICP	1	6.0			mg/L	0.2	1	08/23/13 14:47	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:09	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 0:32	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	10		U	*	ng/L	2	5	09/11/13 11:47	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/05/13 17:32	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0209			mg/L	0.0005	0.003	08/27/13 1:09	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0236			mg/L	0.0005	0.003	08/28/13 0:32	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:09	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:32	pmc
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.3	2	08/21/13 13:38	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L13939-02***
Date Sampled: *08/14/13 13:55*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.0			mg/L	0.3	2	08/23/13 14:47	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:38	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:47	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	08/27/13 1:09	msh
Selenium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	08/28/13 0:32	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:09	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:32	pmc
Sodium, dissolved	M200.7 ICP	1	68.8			mg/L	0.3	2	08/21/13 13:38	aeb
Sodium, total	M200.7 ICP	1	69.3			mg/L	0.3	2	08/23/13 14:47	aeb
Strontium, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	08/21/13 13:38	aeb
Strontium, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	08/23/13 14:47	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:09	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:32	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:09	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:32	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:38	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:47	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0061			mg/L	0.0001	0.0005	08/27/13 1:09	msh
Uranium, total	M200.8 ICP-MS	1	0.0058			mg/L	0.0001	0.0005	08/28/13 0:32	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0215			mg/L	0.0002	0.001	08/27/13 1:09	msh
Vanadium, total	M200.8 ICP-MS	1	0.0223			mg/L	0.0002	0.001	08/28/13 0:32	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/21/13 13:38	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:47	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	135		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	135		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	531		*	umhos/cm	1	10	08/20/13 23:08	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	09/10/13 17:38	mla
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 17:32	bsu
Hardness as CaCO3	SM2340B - Calculation		112			mg/L	1	7	09/13/13 11:14	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.11		*	mg/L	0.02	0.1	08/28/13 23:10	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:05	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	08/23/13 17:19	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 9:55	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L13939-03***
Date Sampled: *08/14/13 15:15*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/10/13 14:28	mla
Cyanide, WAD	SM4500-CN I- distillation								08/27/13 12:15	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:17	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 21:46	pmc
Total Hot Plate Digestion	M200.2 ICP								08/22/13 18:58	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L13939-03***
Date Sampled: *08/14/13 15:15*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/21/13 13:42	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:50	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:12	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 0:36	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0430			mg/L	0.0002	0.001	08/27/13 1:12	msh
Arsenic, total	M200.8 ICP-MS	1	0.0422		*	mg/L	0.0002	0.001	08/28/13 0:36	pmc
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	08/21/13 13:42	aeb
Barium, total	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	08/23/13 14:50	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:12	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:36	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:42	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:50	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/21/13 13:42	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/23/13 14:50	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:12	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:36	pmc
Calcium, dissolved	M200.7 ICP	1	25.6		*	mg/L	0.2	1	08/21/13 13:42	aeb
Calcium, total	M200.7 ICP	1	26.2			mg/L	0.2	1	08/23/13 14:50	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	08/27/13 1:12	msh
Chromium, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.002	08/28/13 0:36	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	08/27/13 1:12	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	08/28/13 0:36	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:12	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:36	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:42	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:50	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:42	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/23/13 14:50	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:12	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:36	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 13:42	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/23/13 14:50	aeb
Magnesium, dissolved	M200.7 ICP	1	14.5			mg/L	0.2	1	08/21/13 13:42	aeb
Magnesium, total	M200.7 ICP	1	14.6			mg/L	0.2	1	08/23/13 14:50	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	08/27/13 1:12	msh
Manganese, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	08/28/13 0:36	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	10		U	*	ng/L	2	5	09/11/13 11:54	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/05/13 17:39	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0097			mg/L	0.0005	0.003	08/27/13 1:12	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0109			mg/L	0.0005	0.003	08/28/13 0:36	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:12	msh
Nickel, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0006	0.003	08/28/13 0:36	pmc
Potassium, dissolved	M200.7 ICP	1	8.9			mg/L	0.3	2	08/21/13 13:42	aeb

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L13939-03***
Date Sampled: *08/14/13 15:15*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.9			mg/L	0.3	2	08/23/13 14:50	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:42	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:50	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0003	08/27/13 1:12	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	08/28/13 0:36	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:12	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:36	pmc
Sodium, dissolved	M200.7 ICP	1	42.0			mg/L	0.3	2	08/21/13 13:42	aeb
Sodium, total	M200.7 ICP	1	42.2			mg/L	0.3	2	08/23/13 14:50	aeb
Strontium, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	08/21/13 13:42	aeb
Strontium, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	08/23/13 14:50	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:12	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:36	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:12	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:36	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:42	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:50	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0005	08/27/13 1:12	msh
Uranium, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	08/28/13 0:36	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0448			mg/L	0.0002	0.001	08/27/13 1:12	msh
Vanadium, total	M200.8 ICP-MS	1	0.0449			mg/L	0.0002	0.001	08/28/13 0:36	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/21/13 13:42	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:50	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	173		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1	3	B	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	175		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	440		*	umhos/cm	1	10	08/20/13 23:17	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	09/10/13 17:39	mla
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 17:33	bsu
Hardness as CaCO3	SM2340B - Calculation		124			mg/L	1	7	09/13/13 11:15	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.94		*	mg/L	0.02	0.1	08/28/13 23:11	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:06	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	08/23/13 17:23	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 9:57	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L13939-04***
Date Sampled: *08/14/13 16:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/10/13 14:44	mla
Cyanide, WAD	SM4500-CN I- distillation								08/27/13 12:23	mla
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:27	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 22:00	pmc
Total Hot Plate Digestion	M200.2 ICP								08/22/13 19:10	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L13939-04***
Date Sampled: *08/14/13 16:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/21/13 13:45	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/23/13 14:53	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:16	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 0:39	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0463			mg/L	0.0002	0.001	08/27/13 1:16	msh
Arsenic, total	M200.8 ICP-MS	1	0.0442		*	mg/L	0.0002	0.001	08/28/13 0:39	pmc
Barium, dissolved	M200.7 ICP	1	0.009	B		mg/L	0.003	0.02	08/21/13 13:45	aeb
Barium, total	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	08/23/13 14:53	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:16	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:39	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:45	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/23/13 14:53	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/21/13 13:45	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	08/23/13 14:53	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:16	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:39	pmc
Calcium, dissolved	M200.7 ICP	1	24.5		*	mg/L	0.2	1	08/21/13 13:45	aeb
Calcium, total	M200.7 ICP	1	25.0			mg/L	0.2	1	08/23/13 14:53	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/27/13 1:16	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 0:39	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	08/27/13 1:16	msh
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	08/28/13 0:39	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:16	msh
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	08/28/13 0:39	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:45	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:53	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:45	aeb
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	08/23/13 14:53	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:16	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:39	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 13:45	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/23/13 14:53	aeb
Magnesium, dissolved	M200.7 ICP	1	14.5			mg/L	0.2	1	08/21/13 13:45	aeb
Magnesium, total	M200.7 ICP	1	14.6			mg/L	0.2	1	08/23/13 14:53	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0239			mg/L	0.0005	0.003	08/27/13 1:16	msh
Manganese, total	M200.8 ICP-MS	1	0.0530			mg/L	0.0005	0.003	08/28/13 0:39	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	10		U	*	ng/L	2	5	09/11/13 12:01	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/05/13 17:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0108			mg/L	0.0005	0.003	08/27/13 1:16	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0120			mg/L	0.0005	0.003	08/28/13 0:39	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:16	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 0:39	pmc
Potassium, dissolved	M200.7 ICP	1	8.8			mg/L	0.3	2	08/21/13 13:45	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L13939-04***
Date Sampled: *08/14/13 16:00*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9.0			mg/L	0.3	2	08/23/13 14:53	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:45	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/23/13 14:53	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	08/27/13 1:16	msh
Selenium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0003	08/28/13 0:39	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:16	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 0:39	pmc
Sodium, dissolved	M200.7 ICP	1	44.9			mg/L	0.3	2	08/21/13 13:45	aeb
Sodium, total	M200.7 ICP	1	45.2			mg/L	0.3	2	08/23/13 14:53	aeb
Strontium, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/21/13 13:45	aeb
Strontium, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	08/23/13 14:53	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:16	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 0:39	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:16	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 0:39	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:45	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/23/13 14:53	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	08/27/13 1:16	msh
Uranium, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0005	08/28/13 0:39	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0434			mg/L	0.0002	0.001	08/27/13 1:16	msh
Vanadium, total	M200.8 ICP-MS	1	0.0434			mg/L	0.0002	0.001	08/28/13 0:39	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/21/13 13:45	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/23/13 14:53	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	168		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	168		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	438		*	umhos/cm	1	10	08/20/13 23:26	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	09/10/13 17:40	mla
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 17:34	bsu
Hardness as CaCO3	SM2340B - Calculation		121			mg/L	1	7	09/13/13 11:15	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.10		*	mg/L	0.02	0.1	08/28/13 23:15	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:07	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	21.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	08/23/13 17:24	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 9:59	khw

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L13939-05***
Date Sampled: *08/14/13 16:05*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/05/13 15:40	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13939***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738PBW1	PBW	08/20/13 15:48				13.5	mg/L		-20	20			
WG349738LCSW2	LCSW	08/20/13 16:01	WC130806-	820.0001		743.5	mg/L	90.7	90	110			
WG349738LCSW5	LCSW	08/20/13 19:25	WC130806-	820.0001		777	mg/L	94.8	90	110			
WG349738PBW2	PBW	08/20/13 19:33				3.3	mg/L		-20	20			
WG349738LCSW8	LCSW	08/20/13 22:29	WC130806-	820.0001		769.1	mg/L	93.8	90	110			
WG349738PBW3	PBW	08/20/13 22:37				U	mg/L		-20	20			
L13940-03DUP	DUP	08/20/13 23:55			U	U	mg/L				0	20	RA
WG349738LCSW11	LCSW	08/21/13 1:54	WC130806-	820.0001		785	mg/L	95.7	90	110			
WG349738PBW4	PBW	08/21/13 2:03				4.4	mg/L		-20	20			
WG349738LCSW14	LCSW	08/21/13 5:13	WC130806-	820.0001		783.7	mg/L	95.6	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.992	mg/L	99.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.09	0.09			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0011		1.054	mg/L	105.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0011	18.5	18.91	mg/L	41	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0011	18.5	18.86	mg/L	36	85	115	0.26	20	M3

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.024	mg/L	101.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.09	0.09			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.066	0.066			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0011		1.025	mg/L	102.4	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0011	U	1.014	mg/L	101.3	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0011	U	1.016	mg/L	101.5	70	130	0.2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02		.0215	mg/L	107.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				.0005	mg/L		-0.0012	0.0012			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.01		.01038	mg/L	103.8	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.01	U	.00932	mg/L	93.2	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.01	U	.00974	mg/L	97.4	70	130	4.41	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02		.02	mg/L	100	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0012	0.0012			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00088	0.00088			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.01		.01115	mg/L	111.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.01	U	.011	mg/L	110	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.01	U	.01116	mg/L	111.6	70	130	1.44	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05224	mg/L	104.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0006	0.0006			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04883	mg/L	97.6	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0463	.1019	mg/L	111.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0463	.1049	mg/L	117.1	70	130	2.9	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05355	mg/L	107.1	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0006	0.0006			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00044	0.00044			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05543	mg/L	110.7	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	.0335	.08502	mg/L	102.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	.0335	.0845	mg/L	101.9	70	130	0.61	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9888	mg/L	99.4	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.009	0.009			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.5015	mg/L	100.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	.015	.518	mg/L	100.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	.015	.5165	mg/L	100.3	85	115	0.29	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.9838	mg/L	99.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.009	0.009			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.0066	0.0066			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.4829	mg/L	96.6	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	U	.4852	mg/L	97	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	U	.4845	mg/L	96.9	70	130	0.14	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04734	mg/L	94.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.04677	mg/L	93.4	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	U	.05313	mg/L	106	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	U	.05314	mg/L	106.1	70	130	0.02	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04686	mg/L	93.7	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.04985	mg/L	99.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	U	.05454	mg/L	108.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	U	.05519	mg/L	110.2	70	130	1.18	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.955	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.12	0.12			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.987	mg/L	98.7	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	U	.948	mg/L	94.8	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	U	.978	mg/L	97.8	85	115	3.12	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.04	mg/L	102	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.12	0.12			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.088	0.088			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.992	mg/L	99.2	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	1.012	mg/L	101.2	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	1.008	mg/L	100.8	70	130	0.4	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.016	mg/L	100.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				.013	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5005		.52	mg/L	103.9	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5005	.02	.536	mg/L	103.1	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5005	.02	.538	mg/L	103.5	85	115	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.007	mg/L	100.4	95	105			
WG349940ICB	ICB	08/23/13 13:11				.012	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5005		.502	mg/L	100.3	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5005	.11	.601	mg/L	98.1	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5005	.11	.602	mg/L	98.3	70	130	0.17	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05044	mg/L	100.9	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.04867	mg/L	97.1	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	U	.05157	mg/L	102.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	U	.05241	mg/L	104.6	70	130	1.62	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05104	mg/L	102.1	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.05154	mg/L	102.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	U	.05141	mg/L	102.6	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	U	.05141	mg/L	102.6	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.3	mg/L	99.3	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	68.0028		70.15	mg/L	103.2	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	68.0028	256	309.4	mg/L	78.5	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	68.0028	256	309.8	mg/L	79.1	85	115	0.13	20	M3

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		99.24	mg/L	99.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.6	0.6			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.44	0.44			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	68.0028		69.45	mg/L	102.1	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	68.0028	11.7	80.36	mg/L	101	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	68.0028	11.7	79.87	mg/L	100.2	70	130	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04911	mg/L	98.2	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04873	mg/L	97.4	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.04973	mg/L	99.4	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05096	mg/L	101.8	70	130	2.44	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04942	mg/L	98.8	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05001	mg/L	99.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04748	mg/L	94.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04682	mg/L	93.5	70	130	1.4	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05085	mg/L	101.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0499	mg/L	99.7	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.00017	.05038	mg/L	100.3	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.00017	.05123	mg/L	102	70	130	1.67	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04932	mg/L	98.6	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05165	mg/L	103.2	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05144	mg/L	102.8	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05131	mg/L	102.5	70	130	0.25	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738LCSW1	LCSW	08/20/13 15:50	PCN42819	1408.8		1406.9	umhos/cm	99.9	90	110			
WG349738LCSW4	LCSW	08/20/13 19:12	PCN42819	1408.8		1369.1	umhos/cm	97.2	90	110			
WG349738LCSW7	LCSW	08/20/13 22:18	PCN42819	1408.8		1356.8	umhos/cm	96.3	90	110			
L13940-03DUP	DUP	08/20/13 23:55			1	1.1	umhos/cm				9.5	20	RA
WG349738LCSW10	LCSW	08/21/13 1:42	PCN42819	1408.8		1336.4	umhos/cm	94.9	90	110			
WG349738LCSW13	LCSW	08/21/13 5:02	PCN42819	1408.8		1317	umhos/cm	93.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L13939***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05142	mg/L	102.8	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0496	mg/L	99.1	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.04962	mg/L	99.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05101	mg/L	101.9	70	130	2.76	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05025	mg/L	100.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				.00819	mg/L		-0.0011	0.0011			BF
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05022	mg/L	100.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.0451	mg/L	90.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04524	mg/L	90.4	70	130	0.31	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350896													
WG350896ICV	ICV	09/10/13 16:40	WI130903-6	.3		.2889	mg/L	96.3	90	110			
WG350896ICB	ICB	09/10/13 16:41				U	mg/L		-0.003	0.003			
WG350900													
WG350883LRB	LRB	09/10/13 17:33				U	mg/L		-0.003	0.003			
WG350883LFB	LFB	09/10/13 17:34	WI130903-2	.2		.2039	mg/L	102	90	110			
L13935-01DUP	DUP	09/10/13 17:36			U	U	mg/L				0	20	RA
L13939-03LFM	LFM	09/10/13 17:39	WI130903-2	.2	U	.1939	mg/L	97	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350164													
WG350164ICV	ICV	08/27/13 15:29	WI130822-6	.3		.291	mg/L	97	90	110			
WG350164ICB	ICB	08/27/13 15:30				U	mg/L		-0.003	0.003			
WG350179													
WG350132LRB	LRB	08/27/13 17:26				U	mg/L		-0.003	0.003			
WG350132LFB	LFB	08/27/13 17:27	WI130822-4	.2		.1984	mg/L	99.2	90	110			
L13570-02DUP	DUP	08/27/13 17:29			U	U	mg/L				0	20	RA
L13905-01LFM	LFM	08/27/13 17:31	WI130822-4	.2	.018	.1467	mg/L	64.4	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.96	mg/L	98	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		1	mg/L	100	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	U	.96	mg/L	96	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	U	.99	mg/L	99	85	115	3.08	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.04	mg/L	102	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.3	0.3			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.22	0.22			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		1.01	mg/L	101	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	.99	mg/L	99	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	1	mg/L	100	70	130	1.01	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.989	mg/L	99.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0014		1.012	mg/L	101.1	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0014	.14	1.124	mg/L	98.3	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0014	.14	1.12	mg/L	97.9	85	115	0.36	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.997	mg/L	99.9	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.06	0.06			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.044	0.044			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0014		1.029	mg/L	102.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0014	.06	1.056	mg/L	99.5	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0014	.06	1.043	mg/L	98.2	70	130	1.24	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05367	mg/L	107.3	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.05031	mg/L	100.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05058	mg/L	101.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05122	mg/L	102.3	70	130	1.26	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05176	mg/L	103.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.04992	mg/L	99.7	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.0508	mg/L	101.5	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.0508	mg/L	101.5	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.984	mg/L	99.2	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.977	mg/L	97.7	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	.04	1.02	mg/L	98	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	.04	1.02	mg/L	98	85	115	0	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.004	mg/L	100.2	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.06	0.06			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.044	0.044			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.963	mg/L	96.3	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	.16	1.124	mg/L	96.4	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	.16	1.124	mg/L	96.4	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		97.78	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	49.99752		49.64	mg/L	99.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	49.99752	56.2	102.5	mg/L	92.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	49.99752	56.2	101.8	mg/L	91.2	85	115	0.69	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		97.14	mg/L	97.1	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.6	0.6			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.44	0.44			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	49.99752		48.75	mg/L	97.5	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	49.99752	.4	48.31	mg/L	95.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	49.99752	.4	48.01	mg/L	95.2	70	130	0.62	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05036	mg/L	100.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				.00107	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04978	mg/L	99.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0239	.0724	mg/L	96.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0239	.07364	mg/L	99.4	70	130	1.7	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04999	mg/L	100	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05121	mg/L	102.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	.0009	.05216	mg/L	102.4	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	.0009	.05199	mg/L	102.1	70	130	0.33	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350765													
WG350765ICV	ICV	09/09/13 12:37	HG130725-7	10		10.21	ng/L	102.1	79	121			
WG350765ICB	ICB	09/09/13 12:44				.23	ng/L		-0.5	0.5			
WG350869													
WG350869CCV1	CCV	09/10/13 12:44	HG130725-7	10		10.77	ng/L	107.7	76.5	123.4			
WG350869CCB1	CCB	09/10/13 12:51				U	ng/L		-0.5	0.5			
WG350869PQV	PQV	09/10/13 12:58	HG130725-8	.5		.53	ng/L	106	70	130			
WG350869LFB	LFB	09/10/13 13:05	HG130725-9	2		1.91	ng/L	95.5	71	125			
L13830-01MS	MS	09/10/13 13:44	HG10XPRE	200	U	17.3	ng/L	86.5	71	125			
L13830-01MSD	MSD	09/10/13 13:51	HG10XPRE	200	U	20.8	ng/L	104	71	125	18.37	24	
WG350869CCV2	CCV	09/10/13 13:58	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350869CCB2	CCB	09/10/13 14:05				.23	ng/L		-0.5	0.5			
WG350869CCV3	CCV	09/11/13 10:41	HG130725-7	10		9.24	ng/L	92.4	76.5	123.4			
WG350869CCB3	CCB	09/11/13 10:48				U	ng/L		-0.5	0.5			
WG350869PQV1	PQV	09/11/13 10:55	HG130725-8	.5		.45	ng/L	90	70	130			
WG350869LFB	LFB	09/11/13 11:02	HG130725-9	2		1.74	ng/L	87	71	125			
WG350869CCV4	CCV	09/11/13 12:08	HG130725-7	10		8.24	ng/L	82.4	76.5	123.4			
WG350869CCB4	CCB	09/11/13 12:15				U	ng/L		-0.5	0.5			
WG350869CCV5	CCV	09/11/13 13:04	HG130725-7	10		7.9	ng/L	79	76.5	123.4			
WG350869CCB5	CCB	09/11/13 13:11				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L13939***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350543													
WG350543ICV	ICV	09/04/13 12:47	HG130725-7	10		8.87	ng/L	88.7	79	121			
WG350543ICB	ICB	09/04/13 12:54				U	ng/L		-0.5	0.5			
WG350655													
WG350655CCV1	CCV	09/05/13 9:37	HG130725-7	10		9.4	ng/L	94	76.5	123.4			
WG350655CCB1	CCB	09/05/13 9:44				U	ng/L		-0.5	0.5			
WG350655PQV	PQV	09/05/13 9:51	HG130725-8	.5		.45	ng/L	90	70	130			
WG350655CCV2	CCV	09/05/13 14:41	HG130725-7	10		8.78	ng/L	87.8	76.5	123.4			
WG350655CCB2	CCB	09/05/13 14:49				U	ng/L		-0.5	0.5			
WG350655LFB	LFB	09/05/13 15:05	HG130725-9	2		1.59	ng/L	79.5	71	125			
WG350655CCV3	CCV	09/05/13 16:01	HG130725-7	10		9.16	ng/L	91.6	76.5	123.4			
WG350655CCB3	CCB	09/05/13 16:08				U	ng/L		-0.5	0.5			
WG350655CCV4	CCV	09/05/13 16:57	HG130725-7	10		8.71	ng/L	87.1	76.5	123.4			
WG350655CCB4	CCB	09/05/13 17:04				U	ng/L		-0.5	0.5			
WG350655CCV5	CCV	09/05/13 17:53	HG130725-7	10		8.96	ng/L	89.6	76.5	123.4			
WG350655CCB5	CCB	09/05/13 18:00				U	ng/L		-0.5	0.5			
L13959-01MS	MS	09/05/13 18:28	HG5XPREP	50	U	9.4	ng/L	94	71	125			
L13959-01MSD	MSD	09/05/13 18:35	HG5XPREP	50	U	9.7	ng/L	97	71	125	3.14	24	
WG350655CCV6	CCV	09/05/13 18:42	HG130725-7	10		8.77	ng/L	87.7	76.5	123.4			
WG350655CCB6	CCB	09/05/13 18:49				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02006		.01946	mg/L	97	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05		.04726	mg/L	94.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05	.0108	.07078	mg/L	120	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05	.0108	.06331	mg/L	105	70	130	11.14	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02006		.01995	mg/L	99.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0015	0.0015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.0011	0.0011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05		.05101	mg/L	102	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05	.0169	.06872	mg/L	103.6	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05	.0169	.06931	mg/L	104.8	70	130	0.85	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05061	mg/L	101.2	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0018	0.0018			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04878	mg/L	97.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.0479	mg/L	95.7	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.04949	mg/L	98.9	70	130	3.27	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05038	mg/L	100.8	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0018	0.0018			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00132	0.00132			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.04994	mg/L	99.8	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04518	mg/L	90.3	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04508	mg/L	90.1	70	130	0.22	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350268													
WG350268ICV	ICV	08/28/13 21:45	WI130712-3	2.416		2.472	mg/L	102.3	90	110			
WG350268ICB	ICB	08/28/13 21:47				U	mg/L		-0.06	0.06			
WG350272													
WG350272LFB1	LFB	08/28/13 23:00	WI130816-3	2		1.998	mg/L	99.9	90	110			
L13794-01AS	AS	08/28/13 23:03	WI130816-3	2	U	1.892	mg/L	94.6	90	110			
L13794-02DUP	DUP	08/28/13 23:05			U	U	mg/L				0	20	RA
WG350272LFB2	LFB	08/28/13 23:35	WI130816-3	2		1.964	mg/L	98.2	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350066													
WG350066ICV	ICV	08/26/13 13:15	WI121105-5	1.003		1.003	mg/L	100	90	110			
WG350066ICB	ICB	08/26/13 13:18				U	mg/L		-0.15	0.15			
WG350081													
WG350081LFB1	LFB	08/26/13 15:24	WI121218-3	1		.977	mg/L	97.7	90	110			
WG350081LFB2	LFB	08/26/13 15:55	WI121218-3	1		1.041	mg/L	104.1	90	110			
L13920-02AS	AS	08/26/13 15:57	WI121218-3	1	U	1.039	mg/L	103.9	90	110			
L13920-03DUP	DUP	08/26/13 16:00			.08	.102	mg/L				24.2	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738LCSW3	LCSW	08/20/13 16:05	PCN41777	6		6.01	units	100.2	98	102			
WG349738LCSW6	LCSW	08/20/13 19:28	PCN41777	6		6.04	units	100.7	98	102			
WG349738LCSW9	LCSW	08/20/13 22:32	PCN41777	6		6.04	units	100.7	98	102			
L13940-03DUP	DUP	08/20/13 23:55			6.3	6.15	units				2.4	20	
WG349738LCSW12	LCSW	08/21/13 1:58	PCN41777	6		6.04	units	100.7	98	102			
WG349738LCSW15	LCSW	08/21/13 5:16	PCN41777	6		6.04	units	100.7	98	102			

SPF Water Engineering

ACZ Project ID: ***L13939***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349964													
WG349964ICV	ICV	08/23/13 15:46	WI130725-8	.65228		.617	mg/L	94.6	90	110			
WG349964ICB	ICB	08/23/13 15:47				.017	mg/L		-0.03	0.03			
WG349983													
WG349873LRB	LRB	08/23/13 16:57				.015	mg/L		-0.03	0.03			B1
WG349873LFB	LFB	08/23/13 16:58	WI130821-2	.5		.476	mg/L	95.2	90	110			
L13920-02LFM	LFM	08/23/13 17:15	WI130821-2	.5	.03	.488	mg/L	91.6	90	110			
L13920-03DUP	DUP	08/23/13 17:17			.03	.031	mg/L				3.3	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	20		19.82	mg/L	99.1	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	99.96112		102.3	mg/L	102.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	99.96112	5.8	108.4	mg/L	102.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	99.96112	5.8	107.8	mg/L	102	85	115	0.56	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	20		19.89	mg/L	99.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.9	0.9			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.66	0.66			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	99.96112		98.72	mg/L	98.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	99.96112	.6	98.61	mg/L	98	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	99.96112	.6	98.24	mg/L	97.7	70	130	0.38	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349701													
WG349701PBW	PBW	08/20/13 9:30				U	mg/L		-15	15			
WG349701LCSW	LCSW	08/20/13 9:31	PCN42846	160		153	mg/L	95.6	80	120			
L13939-01DUP	DUP	08/20/13 9:53			U	U	mg/L				0	10	RA
L13942-03DUP	DUP	08/20/13 10:14			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.94	mg/L	97	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0009		.98	mg/L	97.9	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0009	U	.96	mg/L	95.9	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0009	U	.95	mg/L	94.9	85	115	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.01	mg/L	100.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.3	0.3			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.22	0.22			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1.0009		1.01	mg/L	100.9	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1.0009	U	1.01	mg/L	100.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05168	mg/L	103.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04853	mg/L	97	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0039	.05169	mg/L	95.5	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0039	.05386	mg/L	99.8	70	130	4.11	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05166	mg/L	103.3	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05229	mg/L	104.5	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.04611	mg/L	92.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.04554	mg/L	91	70	130	1.24	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02002		.01827	mg/L	91.3	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.01001		.00868	mg/L	86.7	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.01001	U	.007611	mg/L	76	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.01001	U	.00831	mg/L	83	70	130	8.78	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.02002		.01931	mg/L	96.5	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.00015	0.00015			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00011	0.00011			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.01001		.009537	mg/L	95.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.01001	U	.009214	mg/L	92	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.01001	U	.009259	mg/L	92.5	70	130	0.49	20	

SPF Water Engineering

ACZ Project ID: ***L13939***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.79	mg/L	99.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	100.0495		101	mg/L	101	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	100.0495	19.5	119.8	mg/L	100.3	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	100.0495	19.5	119	mg/L	99.5	85	115	0.67	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	100		99.47	mg/L	99.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.9	0.9			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.66	0.66			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	100.0495		98.55	mg/L	98.5	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	100.0495	130	229	mg/L	99	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	100.0495	130	227.2	mg/L	97.2	70	130	0.79	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.01	mg/L	100.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.504	mg/L	100.8	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	1.6	2.034	mg/L	86.8	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	1.6	2.026	mg/L	85.2	85	115	0.39	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		2.009	mg/L	100.5	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.489	mg/L	97.8	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	.04	.523	mg/L	96.6	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	.04	.521	mg/L	96.2	70	130	0.38	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05321	mg/L	106.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0507	mg/L	101.3	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05356	mg/L	107	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.0543	mg/L	108.5	70	130	1.37	20	

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ACZ Project ID: ***L13939***

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05296	mg/L	105.9	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05071	mg/L	101.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05162	mg/L	103.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05168	mg/L	103.3	70	130	0.12	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05015		.05194	mg/L	103.6	90	110			
WG350108ICB	ICB	08/27/13 0:55				.00013	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04796	mg/L	95.8	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05043	mg/L	100.8	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.04977	mg/L	99.4	70	130	1.32	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05015		.05197	mg/L	103.6	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05005		.05102	mg/L	101.9	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05005	U	.05109	mg/L	102.1	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05005	U	.05142	mg/L	102.7	70	130	0.64	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9705	mg/L	98.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.015	0.015			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.9932	mg/L	99.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	.009	.9783	mg/L	96.9	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	.009	.9763	mg/L	96.7	85	115	0.2	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.9758	mg/L	98.8	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.015	0.015			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.011	0.011			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	1		.99	mg/L	99	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	1	U	.978	mg/L	97.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	1	U	.9752	mg/L	97.5	70	130	0.29	20	

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ACZ Project ID: ***L13939***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05224	mg/L	104.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05		.05008	mg/L	100.2	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05	.0048	.05823	mg/L	106.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05	.0048	.05935	mg/L	109.1	70	130	1.91	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.05247	mg/L	104.9	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0003	0.0003			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00022	0.00022			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.05		.05041	mg/L	100.8	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.05	U	.05222	mg/L	104.4	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.05	U	.05226	mg/L	104.5	70	130	0.08	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04969	mg/L	99.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0006	0.0006			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.05023	mg/L	100.3	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	.0434	.0946	mg/L	102.2	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	.0434	.09624	mg/L	105.5	70	130	1.72	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350160													
WG350160ICV	ICV	08/27/13 22:59	MS130717-9	.05		.04872	mg/L	97.4	90	110			
WG350160ICB	ICB	08/27/13 23:02				U	mg/L		-0.0006	0.0006			
WG350096LRB	LRB	08/27/13 23:06				U	mg/L		-0.00044	0.00044			
WG350096LFB	LFB	08/27/13 23:09	MS130816-3	.0501		.05026	mg/L	100.3	85	115			
L13920-03LFM	LFM	08/28/13 0:23	MS130816-3	.0501	.0005	.05005	mg/L	98.9	70	130			
L13920-03LFMD	LFMD	08/28/13 0:26	MS130816-3	.0501	.0005	.04954	mg/L	97.9	70	130	1.02	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.971	mg/L	98.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.52	mg/L	104	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	2.34	2.728	mg/L	77.6	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	2.34	2.727	mg/L	77.4	85	115	0.04	20	M3

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Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349940													
WG349940ICV	ICV	08/23/13 13:05	II130820-1	2		1.953	mg/L	97.7	95	105			
WG349940ICB	ICB	08/23/13 13:11				U	mg/L		-0.03	0.03			
WG349879LRB	LRB	08/23/13 13:23				U	mg/L		-0.022	0.022			
WG349879LFB	LFB	08/23/13 13:27	II130816-3	.5		.516	mg/L	103.2	85	115			
L13920-01LFM	LFM	08/23/13 14:25	II130816-3	.5	U	.504	mg/L	100.8	70	130			
L13920-01LFMD	LFMD	08/23/13 14:29	II130816-3	.5	U	.501	mg/L	100.2	70	130	0.6	20	

SPF Water Engineering ACZ Project ID: ***L13939***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13939-01	WG349783	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Arsenic, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG349783	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350869	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG349783	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350900	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350179	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13939-02	WG349783	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Arsenic, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG349783	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350869	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG349783	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350900	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350179	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13939-03	WG349783	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Arsenic, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG349783	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350869	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG349783	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350900	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350179	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13939-04	WG349783	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Arsenic, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG349783	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG350160	Copper, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG350869	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG349783	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350900	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350179	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering

ACZ Project ID: ***L13939***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13939
Date Received: 08/19/2013 10:25
Received By: mtb
Date Printed: 8/19/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3376	21.4	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13939

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2013-GW	Mercury Trip Blank Analysis						
Sourdough Spring Lower	8/14/13 12:00		7	X							
Whiskey Spring	8/14/13 13:55		7	X							
Twin Springs South	8/14/13 15:15		7	X							
Twin Spring North	8/14/13 16:00		7	X							
Mercury Trip Blank	8/14/13 16:05		1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/15/13 9:00		
		LPC 8/19/13	10:25

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13939 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 12, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13940

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 19, 2013. This project has been assigned to ACZ's project number, L13940. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L13940. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 12, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

September 12, 2013

Project ID: Calico 3rd Q samplin
ACZ Project ID: L13940

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on August 19, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L13940. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag. Samples were received outside the EPA recommended temperature of 0-6 degrees C.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Total Phosphorous data has been qualified with the B1 flag on the extended qualifier report. The chemist noted that the lab reagent blank (0.015 mg/L) and continued calibration blank (0.016 mg/L) both contained concentrations greater than the MDL. Although this is within acceptance criteria, blank results indicate low-level procedural contamination which should be taken into account when assessing results.

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L13940-01***
Date Sampled: *08/13/13 13:40*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 13:57	mla
Cyanide, WAD	SM4500-CN I- distillation								08/26/13 15:36	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:38	mla
Total Hot Plate Digestion	M200.2 ICP-MS				*				08/26/13 17:36	pmc
Total Hot Plate Digestion	M200.2 ICP								08/26/13 10:53	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L13940-01***
Date Sampled: *08/13/13 13:40*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/21/13 13:48	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/26/13 20:27	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:26	msh
Antimony, total	M200.8 ICP-MS	2		U		mg/L	0.0008	0.004	08/28/13 1:34	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0075			mg/L	0.0002	0.001	08/27/13 1:26	msh
Arsenic, total	M200.8 ICP-MS	2	0.0074			mg/L	0.0004	0.002	08/28/13 1:34	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/21/13 13:48	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	08/26/13 20:27	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:26	msh
Beryllium, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	08/28/13 1:34	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 13:48	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/13 20:27	aeb
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	08/21/13 13:48	aeb
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	08/26/13 20:27	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:26	msh
Cadmium, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	08/28/13 1:34	pmc
Calcium, dissolved	M200.7 ICP	1	43.7		*	mg/L	0.2	1	08/21/13 13:48	aeb
Calcium, total	M200.7 ICP	1	45.7			mg/L	0.2	1	08/26/13 20:27	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	08/27/13 1:26	msh
Chromium, total	M200.8 ICP-MS	2	0.001	B		mg/L	0.001	0.004	08/28/13 1:34	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	08/27/13 1:26	msh
Cobalt, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	08/28/13 1:34	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:26	msh
Copper, total	M200.8 ICP-MS	2		U		mg/L	0.001	0.005	08/28/13 1:34	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:48	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/28/13 1:40	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 13:48	aeb
Iron, total	M200.7 ICP	1	0.08			mg/L	0.02	0.05	08/26/13 20:27	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:26	msh
Lead, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	08/28/13 1:34	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 13:48	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/28/13 1:40	aeb
Magnesium, dissolved	M200.7 ICP	1	9.4			mg/L	0.2	1	08/21/13 13:48	aeb
Magnesium, total	M200.7 ICP	1	10.4			mg/L	0.2	1	08/26/13 20:27	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:26	msh
Manganese, total	M200.8 ICP-MS	2		U		mg/L	0.001	0.005	08/28/13 1:34	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/11/13 12:22	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/06/13 14:43	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	08/27/13 1:26	msh
Molybdenum, total	M200.8 ICP-MS	2	0.002	B		mg/L	0.001	0.005	08/28/13 1:34	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:26	msh
Nickel, total	M200.8 ICP-MS	2		U		mg/L	0.001	0.006	08/28/13 1:34	pmc
Potassium, dissolved	M200.7 ICP	1	4.9			mg/L	0.3	2	08/21/13 13:48	aeb

SPF Water Engineering
Project ID: Calico 3rd Q samplin
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L13940-01***
Date Sampled: *08/13/13 13:40*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.0			mg/L	0.3	2	08/26/13 20:27	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 13:48	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/13 20:27	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	08/28/13 3:49	pmc
Selenium, total	M200.8 ICP-MS	2	0.0010			mg/L	0.0002	0.0005	08/28/13 1:34	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:26	msh
Silver, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	08/28/13 1:34	pmc
Sodium, dissolved	M200.7 ICP	1	19.5			mg/L	0.3	2	08/21/13 13:48	aeb
Sodium, total	M200.7 ICP	1	20.7			mg/L	0.3	2	08/26/13 20:27	aeb
Strontium, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/21/13 13:48	aeb
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	08/26/13 20:27	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:26	msh
Thallium, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	08/28/13 1:34	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	08/27/13 1:26	msh
Tin, total	M200.8 ICP-MS	2		U	*	mg/L	0.0002	0.001	08/28/13 1:34	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 13:48	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/26/13 20:27	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	08/27/13 1:26	msh
Uranium, total	M200.8 ICP-MS	2	0.0038			mg/L	0.0002	0.001	08/28/13 1:34	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0206			mg/L	0.0002	0.001	08/27/13 1:26	msh
Vanadium, total	M200.8 ICP-MS	2	0.0209			mg/L	0.0004	0.002	08/28/13 1:34	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/21/13 13:48	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	08/26/13 20:27	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	152		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	152		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	379		*	umhos/cm	1	10	08/20/13 23:35	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:49	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 15:39	bsu
Hardness as CaCO3	SM2340B - Calculation		148			mg/L	1	7	09/12/13 14:20	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.48		*	mg/L	0.02	0.1	08/28/13 23:16	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:08	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/23/13 17:25	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 10:01	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: SAGEBRUSH DUP

ACZ Sample ID: ***L13940-02***
Date Sampled: *08/13/13 13:50*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 14:08	mla
Cyanide, WAD	SM4500-CN I- distillation								08/26/13 15:45	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:48	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 18:15	pmc
Total Hot Plate Digestion	M200.2 ICP								08/26/13 11:27	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: SAGEBRUSH DUP

ACZ Sample ID: ***L13940-02***
Date Sampled: *08/13/13 13:50*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/21/13 16:38	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/26/13 20:36	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:36	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 1:43	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0076			mg/L	0.0002	0.001	08/27/13 1:36	msh
Arsenic, total	M200.8 ICP-MS	1	0.0071			mg/L	0.0002	0.001	08/28/13 1:43	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/21/13 16:38	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	08/26/13 20:36	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:36	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:43	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 16:38	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/13 20:36	aeb
Boron, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	08/21/13 16:38	aeb
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	08/26/13 20:36	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:36	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:43	pmc
Calcium, dissolved	M200.7 ICP	1	44.9			mg/L	0.2	1	08/21/13 16:38	aeb
Calcium, total	M200.7 ICP	1	45.5			mg/L	0.2	1	08/26/13 20:36	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	08/27/13 1:36	msh
Chromium, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	08/28/13 1:43	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	08/27/13 1:36	msh
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	08/28/13 1:43	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:36	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:43	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 16:38	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/28/13 1:49	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 16:38	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/26/13 20:36	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:36	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:43	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 16:38	aeb
Lithium, total	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	08/28/13 1:49	aeb
Magnesium, dissolved	M200.7 ICP	1	9.7			mg/L	0.2	1	08/21/13 16:38	aeb
Magnesium, total	M200.7 ICP	1	10.0			mg/L	0.2	1	08/26/13 20:36	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:36	msh
Manganese, total	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	08/28/13 1:43	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/11/13 12:29	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/06/13 14:50	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	08/27/13 1:36	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	08/28/13 1:43	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:36	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 1:43	pmc
Potassium, dissolved	M200.7 ICP	1	4.9			mg/L	0.3	2	08/21/13 16:38	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: SAGEBRUSH DUP

ACZ Sample ID: ***L13940-02***
Date Sampled: *08/13/13 13:50*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.6			mg/L	0.3	2	08/26/13 20:36	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 16:38	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/13 20:36	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	08/28/13 3:52	pmc
Selenium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	08/28/13 1:43	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:36	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:43	pmc
Sodium, dissolved	M200.7 ICP	1	19.8			mg/L	0.3	2	08/21/13 16:38	aeb
Sodium, total	M200.7 ICP	1	20.8			mg/L	0.3	2	08/26/13 20:36	aeb
Strontium, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/21/13 16:38	aeb
Strontium, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	08/26/13 20:36	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:36	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:43	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:36	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 1:43	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 16:38	aeb
Titanium, total	M200.7 ICP	1	0.008	B		mg/L	0.005	0.03	08/26/13 20:36	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	08/27/13 1:36	msh
Uranium, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0005	08/28/13 1:43	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0201			mg/L	0.0002	0.001	08/27/13 1:36	msh
Vanadium, total	M200.8 ICP-MS	1	0.0206			mg/L	0.0002	0.001	08/28/13 1:43	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 16:38	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:36	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	152		*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1	152		*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	379		*	umhos/cm	1	10	08/20/13 23:44	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:50	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 15:41	bsu
Hardness as CaCO3	SM2340B - Calculation		152			mg/L	1	7	09/12/13 14:20	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.45		*	mg/L	0.02	0.1	08/28/13 23:17	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:09	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	08/23/13 17:26	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 10:03	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L13940-03***
Date Sampled: *08/13/13 14:20*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 14:19	mla
Cyanide, WAD	SM4500-CN I- distillation								08/26/13 15:54	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 16:59	mla
Total Hot Plate Digestion	M200.2 ICP								08/26/13 11:39	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 18:28	pmc

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L13940-03***
Date Sampled: *08/13/13 14:20*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	08/21/13 16:42	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/26/13 20:39	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/27/13 1:39	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 1:53	pmc
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/27/13 1:39	msh
Arsenic, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	08/28/13 1:53	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	08/21/13 16:42	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	08/26/13 20:39	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:39	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:53	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/21/13 16:42	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/13 20:39	aeb
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 16:42	aeb
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:39	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:39	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:53	pmc
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	08/21/13 16:42	aeb
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	08/26/13 20:39	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/27/13 1:39	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 1:53	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00024	B		mg/L	0.00005	0.0003	08/27/13 1:39	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:53	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:39	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:53	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 16:42	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/28/13 1:52	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/21/13 16:42	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/26/13 20:39	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:39	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:53	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	08/21/13 16:42	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/28/13 1:52	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	08/21/13 16:42	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	08/26/13 20:39	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:39	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:53	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/10/13 13:23	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/06/13 13:05	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/27/13 1:39	msh
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:53	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/27/13 1:39	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 1:53	pmc
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	08/21/13 16:42	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L13940-03***
Date Sampled: *08/13/13 14:20*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	08/26/13 20:39	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/21/13 16:42	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/13 20:39	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0003	08/27/13 1:39	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/28/13 1:53	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/27/13 1:39	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:53	pmc
Sodium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	08/21/13 16:42	aeb
Sodium, total	M200.7 ICP	1		U		mg/L	0.3	2	08/26/13 20:39	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 16:42	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:39	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:39	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:53	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/27/13 1:39	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/28/13 1:53	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	08/21/13 16:42	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/26/13 20:39	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/27/13 1:39	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/28/13 1:53	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/27/13 1:39	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/28/13 1:53	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/21/13 16:42	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:39	aeb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Total Alkalinity		1		U	*	mg/L	2	20	08/20/13 0:00	khw
Conductivity @25C	SM2510B	1	1	B	*	umhos/cm	1	10	08/20/13 23:50	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:50	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 15:42	bsu
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	1	7	09/12/13 14:21	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/28/13 23:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	08/26/13 16:11	mpb
pH (lab)	SM4500H+ B									
pH		1	6.3	H	*	units	0.1	0.1	08/20/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	08/20/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	08/23/13 17:27	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 10:05	khw

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L13940-04***
Date Sampled: *08/13/13 14:30*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/22/13 14:30	mla
Cyanide, WAD	SM4500-CN I- distillation								08/26/13 16:03	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								08/22/13 17:10	mla
Total Hot Plate Digestion	M200.2 ICP-MS								08/26/13 18:42	pmc
Total Hot Plate Digestion	M200.2 ICP								08/26/13 11:51	aeb

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	08/26/13 20:49	aeb
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/28/13 1:56	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0002	0.001	08/28/13 1:56	pmc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	08/26/13 20:49	aeb
Beryllium, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	08/28/13 1:56	pmc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/13 20:49	aeb
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:49	aeb
Cadmium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/28/13 1:56	pmc
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	08/26/13 20:49	aeb
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/28/13 1:56	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	08/28/13 1:56	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:56	pmc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/28/13 1:55	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	08/26/13 20:49	aeb
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	08/28/13 1:56	pmc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	08/28/13 1:55	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	08/26/13 20:49	aeb
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:56	pmc
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/06/13 13:12	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	08/28/13 1:56	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/28/13 1:56	pmc
Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	08/26/13 20:49	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/13 20:49	aeb
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	08/28/13 1:56	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/28/13 1:56	pmc
Sodium, total	M200.7 ICP	1		U		mg/L	0.3	2	08/26/13 20:49	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:49	aeb
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/28/13 1:56	pmc
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	08/28/13 1:56	pmc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/26/13 20:49	aeb
Uranium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/28/13 1:56	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	08/28/13 1:56	pmc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/26/13 20:49	aeb

SPF Water Engineering
Project ID: Calico 3rd Q sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L13940-04***
Date Sampled: *08/13/13 14:30*
Date Received: *08/19/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	08/21/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/21/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/21/13 0:00	khw
Total Alkalinity		1		U	*	mg/L	2	20	08/21/13 0:00	khw
Conductivity @25C	SM2510B	1	1	B	*	umhos/cm	1	10	08/21/13 0:01	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/22/13 23:51	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	08/27/13 15:43	bsu
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/28/13 23:20	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.05	B	*	mg/L	0.05	0.5	08/26/13 16:46	mpb
pH (lab)	SM4500H+ B									
pH		1	6.0	H	*	units	0.1	0.1	08/21/13 0:00	khw
pH measured at		1	22.0		*	C	0.1	0.1	08/21/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	08/23/13 17:28	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	08/20/13 10:07	khw

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L13940***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738PBW1	PBW	08/20/13 15:48				13.5	mg/L		-20	20			
WG349738LCSW2	LCSW	08/20/13 16:01	WC130806-	820.0001		743.5	mg/L	90.7	90	110			
WG349738LCSW5	LCSW	08/20/13 19:25	WC130806-	820.0001		777	mg/L	94.8	90	110			
WG349738PBW2	PBW	08/20/13 19:33				3.3	mg/L		-20	20			
WG349738LCSW8	LCSW	08/20/13 22:29	WC130806-	820.0001		769.1	mg/L	93.8	90	110			
WG349738PBW3	PBW	08/20/13 22:37				U	mg/L		-20	20			
L13940-03DUP	DUP	08/20/13 23:55			U	U	mg/L				0	20	RA
L13948-04DUP	DUP	08/21/13 1:41			663	645.3	mg/L				2.7	20	
WG349738LCSW11	LCSW	08/21/13 1:54	WC130806-	820.0001		785	mg/L	95.7	90	110			
WG349738PBW4	PBW	08/21/13 2:03				4.4	mg/L		-20	20			
WG349738LCSW14	LCSW	08/21/13 5:13	WC130806-	820.0001		783.7	mg/L	95.6	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.992	mg/L	99.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.09	0.09			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0011		1.054	mg/L	105.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0011	18.5	18.91	mg/L	41	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0011	18.5	18.86	mg/L	36	85	115	0.26	20	M3
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.974	mg/L	98.7	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.09	0.09			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1.0011		1.031	mg/L	103	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1.0011	U	1.044	mg/L	104.3	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1.0011	U	1.045	mg/L	104.4	85	115	0.1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.984	mg/L	99.2	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.09	0.09			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.066	0.066			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	1.0011		1.01	mg/L	100.9	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	1.0011	U	1.031	mg/L	103	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	1.0011	U	1.025	mg/L	102.4	70	130	0.58	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02		.0215	mg/L	107.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				.0005	mg/L		-0.0012	0.0012			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.01		.01038	mg/L	103.8	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.01	U	.00932	mg/L	93.2	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.01	U	.00974	mg/L	97.4	70	130	4.41	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.02		.01998	mg/L	99.9	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0012	0.0012			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00088	0.00088			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.01		.01073	mg/L	107.3	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.02	U	.02142	mg/L	107.1	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.02	U	.02146	mg/L	107.3	70	130	0.19	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05224	mg/L	104.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0006	0.0006			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04883	mg/L	97.6	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0463	.1019	mg/L	111.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0463	.1049	mg/L	117.1	70	130	2.9	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05398	mg/L	108	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0006	0.0006			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00044	0.00044			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05457	mg/L	109	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	.0074	.11558	mg/L	108.1	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	.0074	.11432	mg/L	106.8	70	130	1.1	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9888	mg/L	99.4	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.009	0.009			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.5015	mg/L	100.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	.015	.518	mg/L	100.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	.015	.5165	mg/L	100.3	85	115	0.29	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.971	mg/L	98.6	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.009	0.009			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	.5		.4968	mg/L	99.4	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	.5	.019	.5175	mg/L	99.7	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	.5	.019	.5185	mg/L	99.9	85	115	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.9742	mg/L	98.7	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.009	0.009			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.0066	0.0066			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	.5		.4827	mg/L	96.5	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	.5	U	.4954	mg/L	99.1	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	.5	U	.4957	mg/L	99.1	70	130	0.06	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04734	mg/L	94.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.04677	mg/L	93.4	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	U	.05313	mg/L	106	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	U	.05314	mg/L	106.1	70	130	0.02	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.04652	mg/L	93	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.00015	0.00015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00011	0.00011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.0501		.04761	mg/L	95	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	U	.09626	mg/L	96.2	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	U	.0964	mg/L	96.3	70	130	0.15	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.955	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.12	0.12			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.987	mg/L	98.7	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	U	.948	mg/L	94.8	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	U	.978	mg/L	97.8	85	115	3.12	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.956	mg/L	97.8	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.12	0.12			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1		.997	mg/L	99.7	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1	U	.996	mg/L	99.6	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1	U	1.001	mg/L	100.1	85	115	0.5	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		2.013	mg/L	100.7	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.12	0.12			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.088	0.088			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	1		1.006	mg/L	100.6	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	1	U	1.019	mg/L	101.9	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	1	U	1.026	mg/L	102.6	70	130	0.68	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.016	mg/L	100.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				.013	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5005		.52	mg/L	103.9	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5005	.02	.536	mg/L	103.1	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5005	.02	.538	mg/L	103.5	85	115	0.37	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		2.003	mg/L	100.2	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.03	0.03			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	.5005		.518	mg/L	103.5	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	.5005	.16	.666	mg/L	101.1	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	.5005	.16	.672	mg/L	102.3	85	115	0.9	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.987	mg/L	99.4	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.03	0.03			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.022	0.022			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	.5005		.497	mg/L	99.3	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	.5005	.05	.556	mg/L	101.1	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	.5005	.05	.552	mg/L	100.3	70	130	0.72	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05044	mg/L	100.9	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.04867	mg/L	97.1	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	U	.05157	mg/L	102.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	U	.05241	mg/L	104.6	70	130	1.62	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05114	mg/L	102.3	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.0501		.05014	mg/L	100.1	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	U	.10036	mg/L	100.3	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	U	.09972	mg/L	99.6	70	130	0.64	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.3	mg/L	99.3	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	68.0028		70.15	mg/L	103.2	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	68.0028	256	309.4	mg/L	78.5	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	68.0028	256	309.8	mg/L	79.1	85	115	0.13	20	M3
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	100		99.49	mg/L	99.5	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.6	0.6			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	68.0028		71.05	mg/L	104.5	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	68.0028	42.3	111.6	mg/L	101.9	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	68.0028	42.3	112.4	mg/L	103.1	85	115	0.71	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	100		98.82	mg/L	98.8	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.6	0.6			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.44	0.44			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	68.0028		68.57	mg/L	100.8	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	68.0028	45.7	115.6	mg/L	102.8	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	68.0028	45.7	115.1	mg/L	102.1	70	130	0.43	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04911	mg/L	98.2	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04873	mg/L	97.4	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.04973	mg/L	99.4	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05096	mg/L	101.8	70	130	2.44	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.0497	mg/L	99.4	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0015	0.0015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.0011	0.0011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.04972	mg/L	99.3	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	.001	.0992	mg/L	98.1	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	.001	.0985	mg/L	97.4	70	130	0.71	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05085	mg/L	101.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0499	mg/L	99.7	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.00017	.05038	mg/L	100.3	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.00017	.05123	mg/L	102	70	130	1.67	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.04931	mg/L	98.6	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.00015	0.00015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00011	0.00011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05031	mg/L	100.5	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1	U	.0991	mg/L	99.1	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1	U	.1008	mg/L	100.8	70	130	1.7	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738LCSW1	LCSW	08/20/13 15:50	PCN42819	1408.8		1406.9	umhos/cm	99.9	90	110			
WG349738LCSW4	LCSW	08/20/13 19:12	PCN42819	1408.8		1369.1	umhos/cm	97.2	90	110			
WG349738LCSW7	LCSW	08/20/13 22:18	PCN42819	1408.8		1356.8	umhos/cm	96.3	90	110			
L13940-03DUP	DUP	08/20/13 23:55			1	1.1	umhos/cm				9.5	20	RA
L13948-04DUP	DUP	08/21/13 1:41			6450	6480	umhos/cm				0.5	20	
WG349738LCSW10	LCSW	08/21/13 1:42	PCN42819	1408.8		1336.4	umhos/cm	94.9	90	110			
WG349738LCSW13	LCSW	08/21/13 5:02	PCN42819	1408.8		1317	umhos/cm	93.5	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05142	mg/L	102.8	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0496	mg/L	99.1	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.04962	mg/L	99.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05101	mg/L	101.9	70	130	2.76	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.0508	mg/L	101.6	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0015	0.0015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.0011	0.0011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05021	mg/L	100.3	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	U	.0975	mg/L	97.4	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	U	.1006	mg/L	100.5	70	130	3.13	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349918													
WG349918ICV	ICV	08/22/13 22:44	WI130822-6	.3		.28	mg/L	93.3	90	110			
WG349918ICB	ICB	08/22/13 22:45				U	mg/L		-0.003	0.003			
WG349920													
WG349855LRB	LRB	08/22/13 23:26				U	mg/L		-0.003	0.003			
WG349855LFB	LFB	08/22/13 23:26	WI130822-2	.2		.1961	mg/L	98.1	90	110			
L13910-04DUP	DUP	08/22/13 23:41			U	U	mg/L				0	20	RA
L13910-05LFM	LFM	08/22/13 23:42	WI130822-2	.2	U	.1815	mg/L	90.8	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350164													
WG350164ICV	ICV	08/27/13 15:29	WI130822-6	.3		.291	mg/L	97	90	110			
WG350164ICB	ICB	08/27/13 15:30				U	mg/L		-0.003	0.003			
WG350083LRB	LRB	08/27/13 15:31				U	mg/L		-0.003	0.003			
WG350083LFB	LFB	08/27/13 15:32	WI130822-4	.2		.1934	mg/L	96.7	90	110			
L13906-01DUP	DUP	08/27/13 15:34			U	U	mg/L				0	20	RA
L13906-02LFM	LFM	08/27/13 15:35	WI130822-4	.2	U	.1687	mg/L	84.4	90	110			M2

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.96	mg/L	98	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		1	mg/L	100	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	U	.96	mg/L	96	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	U	.99	mg/L	99	85	115	3.08	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.99	mg/L	99.5	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.3	0.3			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1		.97	mg/L	97	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1	U	.96	mg/L	96	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1	U	.98	mg/L	98	85	115	2.06	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350131													
WG350131ICV	ICV	08/28/13 1:15	II130820-1	2		1.97	mg/L	98.5	95	105			
WG350131ICB	ICB	08/28/13 1:21				U	mg/L		-0.3	0.3			
WG350020LRB	LRB	08/28/13 1:33				U	mg/L		-0.22	0.22			
WG350020LFB	LFB	08/28/13 1:36	II130816-3	1		.97	mg/L	97	85	115			
L13940-01LFM	LFM	08/28/13 1:43	II130816-3	1	U	1.01	mg/L	101	70	130			
L13940-01LFMD	LFMD	08/28/13 1:46	II130816-3	1	U	1.04	mg/L	104	70	130	2.93	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.989	mg/L	99.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0014		1.012	mg/L	101.1	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0014	.14	1.124	mg/L	98.3	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0014	.14	1.12	mg/L	97.9	85	115	0.36	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.986	mg/L	99.3	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.06	0.06			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1.0014		1.059	mg/L	105.8	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1.0014	.08	1.099	mg/L	101.8	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1.0014	.08	1.102	mg/L	102.1	85	115	0.27	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.993	mg/L	99.7	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.06	0.06			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.044	0.044			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	1.0014		.998	mg/L	99.7	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	1.0014	.08	1.011	mg/L	93	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	1.0014	.08	1.016	mg/L	93.5	70	130	0.49	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05367	mg/L	107.3	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.05031	mg/L	100.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05058	mg/L	101.1	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.05122	mg/L	102.3	70	130	1.26	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.0521	mg/L	104.2	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05001	mg/L	99.9	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	U	.10008	mg/L	100	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	U	.0997	mg/L	99.6	70	130	0.38	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.984	mg/L	99.2	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.06	0.06			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.977	mg/L	97.7	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	.04	1.02	mg/L	98	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	.04	1.02	mg/L	98	85	115	0	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.971	mg/L	98.6	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.06	0.06			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1		.976	mg/L	97.6	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1	.07	1.029	mg/L	95.9	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1	.07	1.034	mg/L	96.4	85	115	0.48	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350131													
WG350131ICV	ICV	08/28/13 1:15	II130820-1	2		1.964	mg/L	98.2	95	105			
WG350131ICB	ICB	08/28/13 1:21				U	mg/L		-0.06	0.06			
WG350020LRB	LRB	08/28/13 1:33				U	mg/L		-0.044	0.044			
WG350020LFB	LFB	08/28/13 1:36	II130816-3	1		.962	mg/L	96.2	85	115			
L13940-01LFM	LFM	08/28/13 1:43	II130816-3	1	U	1	mg/L	100	70	130			
L13940-01LFMD	LFMD	08/28/13 1:46	II130816-3	1	U	1.002	mg/L	100.2	70	130	0.2	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		97.78	mg/L	97.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.6	0.6			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	49.99752		49.64	mg/L	99.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	49.99752	56.2	102.5	mg/L	92.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	49.99752	56.2	101.8	mg/L	91.2	85	115	0.69	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	100		98	mg/L	98	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.6	0.6			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	49.99752		50.21	mg/L	100.4	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	49.99752	18.9	68.43	mg/L	99.1	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	49.99752	18.9	68.86	mg/L	99.9	85	115	0.63	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	100		96.73	mg/L	96.7	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.6	0.6			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.44	0.44			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	49.99752		48.5	mg/L	97	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	49.99752	10.4	58.97	mg/L	97.1	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	49.99752	10.4	58.84	mg/L	96.9	70	130	0.22	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05036	mg/L	100.7	90	110			
WG350108ICB	ICB	08/27/13 0:55				.00107	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04978	mg/L	99.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0239	.0724	mg/L	96.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0239	.07364	mg/L	99.4	70	130	1.7	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.04911	mg/L	98.2	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0015	0.0015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.0011	0.0011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.04993	mg/L	99.8	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1002	U	.0993	mg/L	99.1	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1002	U	.1011	mg/L	100.9	70	130	1.8	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350765													
WG350765ICV	ICV	09/09/13 12:37	HG130725-7	10		10.21	ng/L	102.1	79	121			
WG350765ICB	ICB	09/09/13 12:44				.23	ng/L		-0.5	0.5			
WG350869													
WG350869CCV1	CCV	09/10/13 12:44	HG130725-7	10		10.77	ng/L	107.7	76.5	123.4			
WG350869CCB1	CCB	09/10/13 12:51				U	ng/L		-0.5	0.5			
WG350869PQV	PQV	09/10/13 12:58	HG130725-8	.5		.53	ng/L	106	70	130			
WG350869LFB	LFB	09/10/13 13:05	HG130725-9	2		1.91	ng/L	95.5	71	125			
WG350869CCV2	CCV	09/10/13 13:58	HG130725-7	10		9.38	ng/L	93.8	76.5	123.4			
WG350869CCB2	CCB	09/10/13 14:05				.23	ng/L		-0.5	0.5			
WG350869CCV3	CCV	09/11/13 10:41	HG130725-7	10		9.24	ng/L	92.4	76.5	123.4			
WG350869CCB3	CCB	09/11/13 10:48				U	ng/L		-0.5	0.5			
WG350869PQV1	PQV	09/11/13 10:55	HG130725-8	.5		.45	ng/L	90	70	130			
WG350869LFB	LFB	09/11/13 11:02	HG130725-9	2		1.74	ng/L	87	71	125			
WG350869CCV4	CCV	09/11/13 12:08	HG130725-7	10		8.24	ng/L	82.4	76.5	123.4			
WG350869CCB4	CCB	09/11/13 12:15				U	ng/L		-0.5	0.5			
L13957-02MS	MS	09/11/13 12:50	HG10XPRE	200	4	18.3	ng/L	71.5	71	125			
L13957-02MSD	MSD	09/11/13 12:57	HG10XPRE	200	4	19.2	ng/L	76	71	125	4.8	24	
WG350869CCV5	CCV	09/11/13 13:04	HG130725-7	10		7.9	ng/L	79	76.5	123.4			
WG350869CCB5	CCB	09/11/13 13:11				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350698													
WG350698ICV	ICV	09/06/13 12:35	HG130725-7	10		10.05	ng/L	100.5	79	121			
WG350698ICB	ICB	09/06/13 12:42				U	ng/L		-0.5	0.5			
WG350698PQV	PQV	09/06/13 12:49	HG130725-8	.5		.53	ng/L	106	70	130			
WG350698LFB	LFB	09/06/13 12:56	HG130725-9	2		1.87	ng/L	93.5	71	125			
WG350698CCV1	CCV	09/06/13 14:08	HG130725-7	10		9.19	ng/L	91.9	76.5	123.4			
WG350698CCB1	CCB	09/06/13 14:15				U	ng/L		-0.5	0.5			
L14021-01MS	MS	09/06/13 14:29	HG2XPREP	8	U	3.47	ng/L	86.8	71	125			
L14021-01MSD	MSD	09/06/13 14:36	HG2XPREP	8	U	3.53	ng/L	88.3	71	125	1.71	24	
WG350698CCV2	CCV	09/06/13 15:11	HG130725-7	10		8.73	ng/L	87.3	76.5	123.4			
WG350698CCB2	CCB	09/06/13 15:18				U	ng/L		-0.5	0.5			
WG350698CCV3	CCV	09/06/13 16:21	HG130725-7	10		8.09	ng/L	80.9	76.5	123.4			
WG350698CCB3	CCB	09/06/13 16:28				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02006		.01946	mg/L	97	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0015	0.0015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05		.04726	mg/L	94.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05	.0108	.07078	mg/L	120	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05	.0108	.06331	mg/L	105	70	130	11.14	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.02006		.02	mg/L	99.7	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0015	0.0015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.0011	0.0011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05		.05041	mg/L	100.8	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1002	.002	.1039	mg/L	101.7	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1002	.002	.1036	mg/L	101.4	70	130	0.29	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05061	mg/L	101.2	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0018	0.0018			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04878	mg/L	97.5	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.0479	mg/L	95.7	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.04949	mg/L	98.9	70	130	3.27	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05168	mg/L	103.4	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0018	0.0018			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00132	0.00132			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.04975	mg/L	99.4	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	U	.0964	mg/L	96.3	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	U	.0964	mg/L	96.3	70	130	0	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350268													
WG350268ICV	ICV	08/28/13 21:45	WI130712-3	2.416		2.472	mg/L	102.3	90	110			
WG350268ICB	ICB	08/28/13 21:47				U	mg/L		-0.06	0.06			
WG350272													
WG350272LFB1	LFB	08/28/13 23:00	WI130816-3	2		1.998	mg/L	99.9	90	110			
L13794-01AS	AS	08/28/13 23:03	WI130816-3	2	U	1.892	mg/L	94.6	90	110			
L13794-02DUP	DUP	08/28/13 23:05			U	U	mg/L				0	20	RA
L13940-03AS	AS	08/28/13 23:19	WI130816-3	2	U	1.914	mg/L	95.7	90	110			
L13940-04DUP	DUP	08/28/13 23:22			U	U	mg/L				0	20	RA
WG350272LFB2	LFB	08/28/13 23:35	WI130816-3	2		1.964	mg/L	98.2	90	110			

SPF Water Engineering

ACZ Project ID: ***L13940***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350066													
WG350066ICV	ICV	08/26/13 13:15	WI121105-5	1.003		1.003	mg/L	100	90	110			
WG350066ICB	ICB	08/26/13 13:18				U	mg/L		-0.15	0.15			
WG350081													
WG350081LFB1	LFB	08/26/13 15:24	WI121218-3	1		.977	mg/L	97.7	90	110			
WG350081LFB2	LFB	08/26/13 15:55	WI121218-3	1		1.041	mg/L	104.1	90	110			
L13920-02AS	AS	08/26/13 15:57	WI121218-3	1	U	1.039	mg/L	103.9	90	110			
L13920-03DUP	DUP	08/26/13 16:00			.08	.102	mg/L				24.2	20	RA
WG350100													
WG350100LFB1	LFB	08/26/13 16:45	WI121218-3	1		.988	mg/L	98.8	90	110			
L13940-04AS	AS	08/26/13 16:47	WI121218-3	1	.05	1.039	mg/L	98.9	90	110			
L13943-01DUP	DUP	08/26/13 16:50			U	U	mg/L				0	20	RA
WG350100LFB2	LFB	08/26/13 17:17	WI121218-3	1		1.09	mg/L	109	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349738													
WG349738LCSW3	LCSW	08/20/13 16:05	PCN41777	6		6.01	units	100.2	98	102			
WG349738LCSW6	LCSW	08/20/13 19:28	PCN41777	6		6.04	units	100.7	98	102			
WG349738LCSW9	LCSW	08/20/13 22:32	PCN41777	6		6.04	units	100.7	98	102			
L13940-03DUP	DUP	08/20/13 23:55			6.3	6.15	units				2.4	20	
L13948-04DUP	DUP	08/21/13 1:41			7.4	7.42	units				0.3	20	
WG349738LCSW12	LCSW	08/21/13 1:58	PCN41777	6		6.04	units	100.7	98	102			
WG349738LCSW15	LCSW	08/21/13 5:16	PCN41777	6		6.04	units	100.7	98	102			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349964													
WG349964ICV	ICV	08/23/13 15:46	WI130725-8	.65228		.617	mg/L	94.6	90	110			
WG349964ICB	ICB	08/23/13 15:47				.017	mg/L		-0.03	0.03			
WG349983													
WG349873LRB	LRB	08/23/13 16:57				.015	mg/L		-0.03	0.03			B1
WG349873LFB	LFB	08/23/13 16:58	WI130821-2	.5		.476	mg/L	95.2	90	110			
L13920-02LFM	LFM	08/23/13 17:15	WI130821-2	.5	.03	.488	mg/L	91.6	90	110			
L13920-03DUP	DUP	08/23/13 17:17			.03	.031	mg/L				3.3	20	RA

SPF Water Engineering

ACZ Project ID: ***L13940***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	20		19.82	mg/L	99.1	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	99.96112		102.3	mg/L	102.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	99.96112	5.8	108.4	mg/L	102.6	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	99.96112	5.8	107.8	mg/L	102	85	115	0.56	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	20		19.71	mg/L	98.6	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.9	0.9			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	99.96112		101.5	mg/L	101.5	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	99.96112	2.7	104.4	mg/L	101.7	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	99.96112	2.7	104.5	mg/L	101.8	85	115	0.1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	20		19.68	mg/L	98.4	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.9	0.9			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.66	0.66			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	99.96112		98.29	mg/L	98.3	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	99.96112	5	105.9	mg/L	100.9	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	99.96112	5	105.9	mg/L	100.9	70	130	0	20	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349701													
WG349701PBW	PBW	08/20/13 9:30				U	mg/L		-15	15			
WG349701LCSW	LCSW	08/20/13 9:31	PCN42846	160		153	mg/L	95.6	80	120			
L13942-03DUP	DUP	08/20/13 10:14			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.94	mg/L	97	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.3	0.3			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1.0009		.98	mg/L	97.9	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1.0009	U	.96	mg/L	95.9	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1.0009	U	.95	mg/L	94.9	85	115	1.05	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.93	mg/L	96.5	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.3	0.3			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1.0009		.99	mg/L	98.9	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1.0009	U	.99	mg/L	98.9	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1.0009	U	.99	mg/L	98.9	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		2	mg/L	100	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.3	0.3			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.22	0.22			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	1.0009		1	mg/L	99.9	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	1.0009	U	1.02	mg/L	101.9	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	1.0009	U	1.02	mg/L	101.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05168	mg/L	103.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04853	mg/L	97	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	.0039	.05169	mg/L	95.5	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	.0039	.05386	mg/L	99.8	70	130	4.11	20	
WG350186													
WG350186ICV	ICV	08/28/13 3:24	MS130717-9	.05		.05093	mg/L	101.9	90	110			
WG350186ICB	ICB	08/28/13 3:27				U	mg/L		-0.0003	0.0003			
WG350186LFB	LFB	08/28/13 3:30	MS130816-3	.05005		.04855	mg/L	97	85	115			
L13832-06AS	AS	08/28/13 3:36	MS130816-3	.05005	.0016	.05318	mg/L	103.1	70	130			
L13832-06ASD	ASD	08/28/13 3:39	MS130816-3	.05005	.0016	.05271	mg/L	102.1	70	130	0.89	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05189	mg/L	103.8	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.04892	mg/L	97.7	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1001	.001	.09864	mg/L	97.5	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1001	.001	.09872	mg/L	97.6	70	130	0.08	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.02002		.01827	mg/L	91.3	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.00015	0.00015			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.01001		.00868	mg/L	86.7	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.01001	U	.007611	mg/L	76	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.01001	U	.00831	mg/L	83	70	130	8.78	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.02002		.01908	mg/L	95.3	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.00015	0.00015			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00011	0.00011			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.01001		.009423	mg/L	94.1	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.02002	U	.01839	mg/L	91.9	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.02002	U	.01846	mg/L	92.2	70	130	0.38	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	100		99.79	mg/L	99.8	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.9	0.9			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	100.0495		101	mg/L	101	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	100.0495	19.5	119.8	mg/L	100.3	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	100.0495	19.5	119	mg/L	99.5	85	115	0.67	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	100		99.4	mg/L	99.4	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.9	0.9			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	100.0495		100.9	mg/L	100.9	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	100.0495	179	272.3	mg/L	93.3	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	100.0495	179	272.1	mg/L	93.1	85	115	0.07	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	100		99.13	mg/L	99.1	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.9	0.9			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.66	0.66			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	100.0495		97.79	mg/L	97.7	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	100.0495	20.7	120.8	mg/L	100.1	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	100.0495	20.7	120.7	mg/L	100	70	130	0.08	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		2.01	mg/L	100.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.504	mg/L	100.8	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	1.6	2.034	mg/L	86.8	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	1.6	2.026	mg/L	85.2	85	115	0.39	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		2.001	mg/L	100.1	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.03	0.03			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	.5		.504	mg/L	100.8	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	.5	1.77	2.201	mg/L	86.2	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	.5	1.77	2.215	mg/L	89	85	115	0.63	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		2.003	mg/L	100.2	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.03	0.03			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.022	0.022			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	.5		.487	mg/L	97.4	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	.5	.21	.704	mg/L	98.8	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	.5	.21	.703	mg/L	98.6	70	130	0.14	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05321	mg/L	106.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.0507	mg/L	101.3	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05356	mg/L	107	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.0543	mg/L	108.5	70	130	1.37	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05333	mg/L	106.7	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05114	mg/L	102.2	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1002	U	.10264	mg/L	102.4	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1002	U	.10252	mg/L	102.3	70	130	0.12	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05015		.05194	mg/L	103.6	90	110			
WG350108ICB	ICB	08/27/13 0:55				.00013	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05005		.04796	mg/L	95.8	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05005	U	.05043	mg/L	100.8	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05005	U	.04977	mg/L	99.4	70	130	1.32	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05015		.052	mg/L	103.7	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05005		.05021	mg/L	100.3	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1002	U	.10052	mg/L	100.3	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1002	U	.10112	mg/L	100.9	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.9705	mg/L	98.5	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.015	0.015			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	1		.9932	mg/L	99.3	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	1	.009	.9783	mg/L	96.9	85	115			
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	1	.009	.9763	mg/L	96.7	85	115	0.2	20	
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.9675	mg/L	98.4	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.015	0.015			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	1		1.001	mg/L	100.1	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	1	U	1.005	mg/L	100.5	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	1	U	1.008	mg/L	100.8	85	115	0.3	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.9812	mg/L	99.1	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.015	0.015			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.011	0.011			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	1		.9909	mg/L	99.1	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	1	U	1.01	mg/L	101	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	1	U	1.013	mg/L	101.3	70	130	0.3	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.05224	mg/L	104.5	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0003	0.0003			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.05		.05008	mg/L	100.2	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.05	.0048	.05823	mg/L	106.9	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.05	.0048	.05935	mg/L	109.1	70	130	1.91	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.05204	mg/L	104.1	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0003	0.0003			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00022	0.00022			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.05		.05019	mg/L	100.4	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1	.0038	.10482	mg/L	101	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1	.0038	.10552	mg/L	101.7	70	130	0.67	20	

SPF Water Engineering

ACZ Project ID: ***L13940***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350108													
WG350108ICV	ICV	08/27/13 0:52	MS130717-9	.05		.04969	mg/L	99.4	90	110			
WG350108ICB	ICB	08/27/13 0:55				U	mg/L		-0.0006	0.0006			
WG350108LFB	LFB	08/27/13 0:59	MS130816-3	.0501		.05023	mg/L	100.3	85	115			
L13939-04AS	AS	08/27/13 1:19	MS130816-3	.0501	.0434	.0946	mg/L	102.2	70	130			
L13939-04ASD	ASD	08/27/13 1:22	MS130816-3	.0501	.0434	.09624	mg/L	105.5	70	130	1.72	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350175													
WG350175ICV	ICV	08/28/13 1:11	MS130717-9	.05		.04896	mg/L	97.9	90	110			
WG350175ICB	ICB	08/28/13 1:15				U	mg/L		-0.0006	0.0006			
WG350097LRB	LRB	08/28/13 1:18				U	mg/L		-0.00044	0.00044			
WG350097LFB	LFB	08/28/13 1:21	MS130816-3	.0501		.05043	mg/L	100.7	85	115			
L13940-01LFM	LFM	08/28/13 1:37	MS2XW	.1	.0209	.12228	mg/L	101.4	70	130			
L13940-01LFMD	LFMD	08/28/13 1:40	MS2XW	.1	.0209	.12182	mg/L	100.9	70	130	0.38	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG349783													
WG349783ICV	ICV	08/21/13 12:30	II130729-1	2		1.971	mg/L	98.6	95	105			
WG349783ICB	ICB	08/21/13 12:36				U	mg/L		-0.03	0.03			
WG349783LFB	LFB	08/21/13 12:49	II130816-3	.5		.52	mg/L	104	85	115			
L13951-02AS	AS	08/21/13 14:03	II130816-3	.5	2.34	2.728	mg/L	77.6	85	115			M3
L13951-02ASD	ASD	08/21/13 14:06	II130816-3	.5	2.34	2.727	mg/L	77.4	85	115	0.04	20	M3
WG349818													
WG349818ICV	ICV	08/21/13 15:40	II130729-1	2		1.92	mg/L	96	95	105			
WG349818ICB	ICB	08/21/13 15:45				U	mg/L		-0.03	0.03			
WG349818LFB	LFB	08/21/13 15:58	II130816-3	.5		.512	mg/L	102.4	85	115			
L13901-01AS	AS	08/21/13 16:17	II130816-3	.5	U	.508	mg/L	101.6	85	115			
L13901-01ASD	ASD	08/21/13 16:20	II130816-3	.5	U	.509	mg/L	101.8	85	115	0.2	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG350104													
WG350104ICV	ICV	08/26/13 19:53	II130820-1	2		1.979	mg/L	99	95	105			
WG350104ICB	ICB	08/26/13 19:59				U	mg/L		-0.03	0.03			
WG350020LRB	LRB	08/26/13 20:11				U	mg/L		-0.022	0.022			
WG350020LFB	LFB	08/26/13 20:15	II130816-3	.5		.507	mg/L	101.4	85	115			
L13940-01LFM	LFM	08/26/13 20:30	II130816-3	.5	.01	.521	mg/L	102.2	70	130			
L13940-01LFMD	LFMD	08/26/13 20:33	II130816-3	.5	.01	.524	mg/L	102.8	70	130	0.57	20	

SPF Water Engineering ACZ Project ID: ***L13940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13940-01	WG350097	Total Hot Plate Digestion	M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.
	WG349783	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350164	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L13940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13940-02	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350164	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L13940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13940-03	WG350108	Selenium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
			SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350164	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350081	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L13940***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L13940-04	WG349738	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG349920	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350164	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG350272	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG350100	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG349983	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349701	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG349738	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Q sampling

ACZ Project ID: L13940
Date Received: 08/19/2013 10:27
Received By: mtb
Date Printed: 8/19/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3465	23.2	11	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L13940

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2013-GW

PO#: Calico 3rd Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2013-GW	**SPF-2013-GW
Sagebrush Spring	8/13/13 13:40		7	X	
Sagebrush Dup	8/13/13 13:50		7	X	
Equipment Blank	8/13/13 14:20		7	X	
Transfer Blank	8/13/13 14:30		5		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

** No analysis for dissolved metals (Green dot) or dissolved Mercury. Complete all others per "SPF-2013-GW"

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	8/14/13 7:00		
		WPC 8-19-13	10:27

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L13940 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 17, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15734

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 25, 2013. This project has been assigned to ACZ's project number, L15734. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15734. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 16, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

December 17, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15734

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on November 25, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15734. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The dissolved Cobalt values exceed the corresponding total values for project L15734. The samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L15734-01***
Date Sampled: *11/20/13 11:00*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/03/13 18:21	mpb
Cyanide, WAD	SM4500-CN I- distillation								11/26/13 16:51	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 11:54	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:28	scp
Total Hot Plate Digestion	M200.2 ICP								12/02/13 19:02	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L15734-01***
Date Sampled: *11/20/13 11:00*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 1:00	aeb
Aluminum, total	M200.7 ICP	1	0.89			mg/L	0.03	0.2	12/03/13 16:50	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 2:21	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 20:45	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0100			mg/L	0.0002	0.001	12/05/13 2:21	msh
Arsenic, total	M200.8 ICP-MS	1	0.0102			mg/L	0.0002	0.001	12/06/13 20:45	pmc
Barium, dissolved	M200.7 ICP	1	0.019	B		mg/L	0.003	0.02	12/03/13 1:00	aeb
Barium, total	M200.7 ICP	1	0.030			mg/L	0.003	0.02	12/03/13 16:50	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 2:21	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 20:45	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 1:00	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 16:50	jjc
Boron, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	12/03/13 1:00	aeb
Boron, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	12/03/13 16:50	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:21	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 20:45	pmc
Calcium, dissolved	M200.7 ICP	1	19.1			mg/L	0.2	1	12/03/13 1:00	aeb
Calcium, total	M200.7 ICP	1	19.6			mg/L	0.2	1	12/03/13 16:50	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	12/05/13 2:21	msh
Chromium, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.002	12/06/13 20:45	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00049			mg/L	0.00005	0.0003	12/11/13 5:16	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00036			mg/L	0.00005	0.0003	12/13/13 21:44	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 2:21	msh
Copper, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	12/06/13 20:45	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 1:00	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 16:50	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 1:00	aeb
Iron, total	M200.7 ICP	1	0.75			mg/L	0.02	0.05	12/03/13 16:50	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:21	msh
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	12/06/13 20:45	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/03/13 1:00	aeb
Lithium, total	M200.7 ICP	1	0.03	B		mg/L	0.02	0.1	12/03/13 16:50	jjc
Magnesium, dissolved	M200.7 ICP	1	5.3			mg/L	0.2	1	12/03/13 1:00	aeb
Magnesium, total	M200.7 ICP	1	5.6			mg/L	0.2	1	12/03/13 16:50	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0066			mg/L	0.0005	0.003	12/05/13 2:21	msh
Manganese, total	M200.8 ICP-MS	1	0.0242		*	mg/L	0.0005	0.003	12/06/13 20:45	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	11/27/13 13:55	las
Mercury, total	M1631, Atomic Fluorescence	2	13.2			ng/L	0.4	1	12/03/13 13:52	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0065			mg/L	0.0005	0.003	12/05/13 2:21	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0067			mg/L	0.0005	0.003	12/06/13 20:45	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 2:21	msh
Nickel, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0006	0.003	12/06/13 20:45	pmc
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.3	2	12/03/13 1:00	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L15734-01***
Date Sampled: *11/20/13 11:00*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.3			mg/L	0.3	2	12/03/13 16:50	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 1:00	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 16:50	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	12/05/13 2:21	msh
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	12/06/13 20:45	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 17:22	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 20:45	pmc
Sodium, dissolved	M200.7 ICP	1	46.6			mg/L	0.3	2	12/03/13 1:00	aeb
Sodium, total	M200.7 ICP	1	45.7			mg/L	0.3	2	12/03/13 16:50	jjc
Strontium, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/03/13 1:00	aeb
Strontium, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/03/13 16:50	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:21	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 20:45	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 2:21	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/06/13 20:45	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 1:00	aeb
Titanium, total	M200.7 ICP	1	0.037			mg/L	0.005	0.03	12/03/13 16:50	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	12/05/13 2:21	msh
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	12/06/13 20:45	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0082			mg/L	0.0002	0.001	12/05/13 2:21	msh
Vanadium, total	M200.8 ICP-MS	1	0.0103			mg/L	0.0002	0.001	12/06/13 20:45	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 1:00	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 16:50	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L15734-01***
Date Sampled: *11/20/13 11:00*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	105			mg/L	2	20	12/04/13 0:00	abm
Carbonate as CaCO3		1	9	B		mg/L	2	20	12/04/13 0:00	abm
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	abm
Total Alkalinity		1	114			mg/L	2	20	12/04/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	1	13.8		*	mg/L	0.5	2.5	12/09/13 17:09	tcd
Conductivity @25C	SM2510B	1	349			umhos/cm	1	10	12/04/13 4:33	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 18:18	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	11/26/13 17:42	mpb
Fluoride	M300.0 - Ion Chromatography	1	2.60		*	mg/L	0.1	0.5	12/09/13 17:09	tcd
Hardness as CaCO3	SM2340B - Calculation		70			mg/L	1	7	12/17/13 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.41			mg/L	0.02	0.1	12/06/13 0:38	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:26	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	12/04/13 0:00	abm
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	12/07/13 12:17	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	230			mg/L	10	20	11/26/13 15:28	khw
Residue, Non-Filterable (TSS) @105C	SM2540D	1	8	B	*	mg/L	5	20	11/26/13 14:22	id
Sulfate	M300.0 - Ion Chromatography	1	31.9			mg/L	0.5	2.5	12/09/13 17:09	tcd

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: OWYHEE DS

ACZ Sample ID: ***L15734-02***
Date Sampled: *11/20/13 15:10*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/03/13 18:40	mpb
Cyanide, WAD	SM4500-CN I- distillation								11/26/13 17:00	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 12:15	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:43	scp
Total Hot Plate Digestion	M200.2 ICP								12/02/13 19:14	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: OWYHEE DS

ACZ Sample ID: ***L15734-02***
Date Sampled: *11/20/13 15:10*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 1:03	aeb
Aluminum, total	M200.7 ICP	1	0.37			mg/L	0.03	0.2	12/03/13 16:53	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 2:24	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 20:49	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0059			mg/L	0.0002	0.001	12/05/13 2:24	msh
Arsenic, total	M200.8 ICP-MS	1	0.0059			mg/L	0.0002	0.001	12/06/13 20:49	pmc
Barium, dissolved	M200.7 ICP	1	0.015	B		mg/L	0.003	0.02	12/03/13 1:03	aeb
Barium, total	M200.7 ICP	1	0.019	B		mg/L	0.003	0.02	12/03/13 16:53	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 2:24	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 20:49	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 1:03	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 16:53	jjc
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	12/03/13 1:03	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	12/03/13 16:53	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:24	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 20:49	pmc
Calcium, dissolved	M200.7 ICP	1	20.7			mg/L	0.2	1	12/03/13 1:03	aeb
Calcium, total	M200.7 ICP	1	21.2			mg/L	0.2	1	12/03/13 16:53	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 2:24	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/06/13 20:49	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00076			mg/L	0.00005	0.0003	12/11/13 5:25	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	12/13/13 21:46	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	12/05/13 2:24	msh
Copper, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.003	12/06/13 20:49	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 1:03	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 16:53	jjc
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	12/03/13 1:03	aeb
Iron, total	M200.7 ICP	1	0.30			mg/L	0.02	0.05	12/03/13 16:53	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:24	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/06/13 20:49	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	12/03/13 1:03	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/03/13 16:53	jjc
Magnesium, dissolved	M200.7 ICP	1	5.5			mg/L	0.2	1	12/03/13 1:03	aeb
Magnesium, total	M200.7 ICP	1	5.7			mg/L	0.2	1	12/03/13 16:53	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0064			mg/L	0.0005	0.003	12/05/13 2:24	msh
Manganese, total	M200.8 ICP-MS	1	0.0100		*	mg/L	0.0005	0.003	12/09/13 19:58	pmc
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	12/05/13 2:24	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	12/06/13 20:49	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	12/05/13 2:24	msh
Nickel, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0006	0.003	12/06/13 20:49	pmc
Potassium, dissolved	M200.7 ICP	1	3.5			mg/L	0.3	2	12/03/13 1:03	aeb
Potassium, total	M200.7 ICP	1	3.7			mg/L	0.3	2	12/03/13 16:53	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 1:03	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: OWYHEE DS

ACZ Sample ID: ***L15734-02***
Date Sampled: *11/20/13 15:10*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 16:53	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	12/05/13 2:24	msh
Selenium, total	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	12/06/13 20:49	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 17:25	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 20:49	pmc
Sodium, dissolved	M200.7 ICP	1	28.6			mg/L	0.3	2	12/03/13 1:03	aeb
Sodium, total	M200.7 ICP	1	28.6			mg/L	0.3	2	12/03/13 16:53	jjc
Strontium, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	12/03/13 1:03	aeb
Strontium, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	12/03/13 16:53	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 2:24	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 20:49	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 2:24	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/06/13 20:49	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 1:03	aeb
Titanium, total	M200.7 ICP	1	0.014	B		mg/L	0.005	0.03	12/03/13 16:53	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0005	12/05/13 2:24	msh
Uranium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0005	12/06/13 20:49	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0043			mg/L	0.0002	0.001	12/05/13 2:24	msh
Vanadium, total	M200.8 ICP-MS	1	0.0052			mg/L	0.0002	0.001	12/06/13 20:49	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 1:03	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 16:53	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: OWYHEE DS

ACZ Sample ID: ***L15734-02***
Date Sampled: *11/20/13 15:10*
Date Received: *11/25/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	90			mg/L	2	20	12/04/13 0:00	abm
Carbonate as CaCO3		1	9	B		mg/L	2	20	12/04/13 0:00	abm
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	abm
Total Alkalinity		1	100			mg/L	2	20	12/04/13 0:00	abm
Chloride	M300.0 - Ion Chromatography	1	8.56		*	mg/L	0.5	2.5	12/09/13 17:27	tcd
Conductivity @25C	SM2510B	1	277			umhos/cm	1	10	12/04/13 4:41	abm
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 18:19	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	11/26/13 17:43	mpb
Fluoride	M300.0 - Ion Chromatography	1	1.20		*	mg/L	0.1	0.5	12/09/13 17:27	tcd
Hardness as CaCO3	SM2340B - Calculation		74			mg/L	1	7	12/17/13 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.11			mg/L	0.02	0.1	12/06/13 0:39	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:27	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	12/04/13 0:00	abm
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	abm
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/07/13 12:19	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	180			mg/L	10	20	11/26/13 16:58	khw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/26/13 14:25	id
Sulfate	M300.0 - Ion Chromatography	1	23.3			mg/L	0.5	2.5	12/09/13 17:27	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15734***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355781													
WG355781PBW1	PBW	12/03/13 15:00				6.8	mg/L		-20	20			
WG355781LCSW2	LCSW	12/03/13 15:13	WC131126-	820.0001		744	mg/L	90.7	90	110			
WG355781LCSW5	LCSW	12/03/13 19:53	WC131126-	820.0001		763.3	mg/L	93.1	90	110			
WG355781PBW2	PBW	12/03/13 20:02				2.6	mg/L		-20	20			
WG355781LCSW8	LCSW	12/03/13 22:55	WC131126-	820.0001		750.3	mg/L	91.5	90	110			
WG355781PBW3	PBW	12/03/13 23:05				2.7	mg/L		-20	20			
WG355781LCSW11	LCSW	12/04/13 2:21	WC131126-	820.0001		766.8	mg/L	93.5	90	110			
WG355781PBW4	PBW	12/04/13 2:29				2.5	mg/L		-20	20			
L15818-11DUP	DUP	12/04/13 6:07			856	869.1	mg/L				1.5	20	
WG355781LCSW14	LCSW	12/04/13 6:20	WC131126-	820.0001		783.5	mg/L	95.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.97	mg/L	98.5	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.09	0.09			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1.0011		1.021	mg/L	102	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1.0011	U	1.054	mg/L	105.3	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1.0011	U	1.058	mg/L	105.7	85	115	0.38	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1.0011	.05	1.107	mg/L	105.6	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1.0011	.05	1.105	mg/L	105.4	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		2.002	mg/L	100.1	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.09	0.09			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.066	0.066			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1.0011		1.028	mg/L	102.7	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1.0011	.36	1.536	mg/L	117.5	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1.0011	.36	1.536	mg/L	117.5	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.02		.02062	mg/L	103.1	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0012	0.0012			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.01		.01036	mg/L	103.6	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.01	U	.0105	mg/L	105	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.01	U	.01046	mg/L	104.6	70	130	0.38	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02		.02033	mg/L	101.7	90	110			
WG356064ICB	ICB	12/06/13 20:23				.00047	mg/L		-0.0012	0.0012			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00088	0.00088			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.01		.01124	mg/L	112.4	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.01	U	.01122	mg/L	112.2	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.01	U	.01115	mg/L	111.5	70	130	0.63	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05449	mg/L	109	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0006	0.0006			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.05074	mg/L	101.4	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	.0059	.06128	mg/L	110.6	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	.0059	.0617	mg/L	111.5	70	130	0.68	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05226	mg/L	104.5	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0006	0.0006			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00044	0.00044			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05181	mg/L	103.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0013	.05588	mg/L	109.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0013	.0551	mg/L	107.5	70	130	1.41	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.963	mg/L	98.2	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.009	0.009			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	.5		.4988	mg/L	99.8	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	.5	.036	.5317	mg/L	99.1	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	.5	.036	.5361	mg/L	100	85	115	0.82	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	.5	U	.5009	mg/L	100.2	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	.5	U	.4973	mg/L	99.5	85	115	0.72	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.974	mg/L	98.7	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.009	0.009			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.0066	0.0066			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	.5		.4804	mg/L	96.1	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	.5	.078	.5722	mg/L	98.8	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	.5	.078	.571	mg/L	98.6	70	130	0.21	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.04924	mg/L	98.5	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.00015	0.00015			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.0501		.04447	mg/L	88.8	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.0501	U	.04952	mg/L	98.8	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.0501	U	.04943	mg/L	98.7	70	130	0.18	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04662	mg/L	93.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.00015	0.00015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.04783	mg/L	95.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.00542	.05579	mg/L	100.5	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.00542	.05486	mg/L	98.7	70	130	1.68	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		2.008	mg/L	100.4	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.12	0.12			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1		1.048	mg/L	104.8	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1	U	1.035	mg/L	103.5	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1	U	1.035	mg/L	103.5	85	115	0	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1	U	1.026	mg/L	102.6	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1	U	1.035	mg/L	103.5	85	115	0.87	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.997	mg/L	99.9	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.12	0.12			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.088	0.088			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1		1.045	mg/L	104.5	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1	U	1.075	mg/L	107.5	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1	U	1.034	mg/L	103.4	70	130	3.89	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.994	mg/L	99.7	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.03	0.03			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	.5005		.504	mg/L	100.7	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	.5005	.24	.737	mg/L	99.3	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	.5005	.24	.74	mg/L	99.9	85	115	0.41	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	.5005	.02	.529	mg/L	101.7	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	.5005	.02	.525	mg/L	100.9	85	115	0.76	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		2.004	mg/L	100.2	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.03	0.03			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.022	0.022			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	.5005		.49	mg/L	97.9	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	.5005	.03	.526	mg/L	99.1	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	.5005	.03	.521	mg/L	98.1	70	130	0.96	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.04868	mg/L	97.4	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.0501		.04856	mg/L	96.9	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.0501	U	.0498	mg/L	99.4	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.0501	U	.05016	mg/L	100.1	70	130	0.72	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04953	mg/L	99.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.05045	mg/L	100.7	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.0038	.05205	mg/L	96.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.0038	.05128	mg/L	94.8	70	130	1.49	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	100		98.86	mg/L	98.9	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.6	0.6			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	68.00225		69.57	mg/L	102.3	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	68.00225	91.8	158.9	mg/L	98.7	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	68.00225	91.8	158.9	mg/L	98.7	85	115	0	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	68.00225	6.4	76.6	mg/L	103.2	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	68.00225	6.4	76.75	mg/L	103.5	85	115	0.2	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	100		99.4	mg/L	99.4	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.6	0.6			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.44	0.44			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	68.00225		68.71	mg/L	101	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	68.00225	62.6	132.9	mg/L	103.4	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	68.00225	62.6	131.6	mg/L	101.5	70	130	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
L15749-01DUP	DUP	12/09/13 18:57			67.5	69.1	mg/L				2.3	20	RA
L15749-02AS	AS	12/09/13 19:32	WI131011-1	600	107	721	mg/L	102.3	90	110			
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30.3	mg/L	101	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.04972	mg/L	99.4	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0015	0.0015			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.04851	mg/L	96.9	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	U	.04809	mg/L	96.1	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	U	.04834	mg/L	96.6	70	130	0.52	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.0494	mg/L	98.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04947	mg/L	98.8	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.04824	mg/L	96.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.04753	mg/L	95	70	130	1.48	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356226													
WG356226ICV	ICV	12/11/13 4:53	MS131202-2	.05		.04963	mg/L	99.3	90	110			
WG356226ICB	ICB	12/11/13 4:56				U	mg/L		-0.00015	0.00015			
WG356226LFB	LFB	12/11/13 5:00	MS131118-2	.05005		.05167	mg/L	103.2	85	115			
L15734-01AS	AS	12/11/13 5:19	MS131118-2	.05005	.00049	.05178	mg/L	102.5	70	130			
L15734-01ASD	ASD	12/11/13 5:22	MS131118-2	.05005	.00049	.0523	mg/L	103.5	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356436													
WG356436ICV	ICV	12/13/13 21:19	MS131202-2	.05		.04942	mg/L	98.8	90	110			
WG356436ICB	ICB	12/13/13 21:21				U	mg/L		-0.00015	0.00015			
WG355846LRB	LRB	12/13/13 21:23				U	mg/L		-0.00011	0.00011			
WG355846LFB	LFB	12/13/13 21:24	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
WG355922LRB	LRB	12/13/13 21:37				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/13/13 21:43	MS131118-2	.05005		.05096	mg/L	101.8	85	115			
L15749-02LFM	LFM	12/13/13 21:50	MS131118-2	.05005	.2452	.2826	mg/L	74.7	70	130			
L15749-02LFMD	LFMD	12/13/13 21:52	MS131118-2	.05005	.2452	.2986	mg/L	106.7	70	130	5.51	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355781													
WG355781LCSW1	LCSW	12/03/13 15:02	PCN42442	1408.8		1438.6	umhos/cm	102.1	90	110			
WG355781LCSW4	LCSW	12/03/13 19:42	PCN42442	1408.8		1415	umhos/cm	100.4	90	110			
WG355781LCSW7	LCSW	12/03/13 22:44	PCN42442	1408.8		1411	umhos/cm	100.2	90	110			
WG355781LCSW10	LCSW	12/04/13 2:09	PCN42442	1408.8		1394.6	umhos/cm	99	90	110			
L15818-11DUP	DUP	12/04/13 6:07			3720	3710	umhos/cm				0.3	20	
WG355781LCSW13	LCSW	12/04/13 6:08	PCN42442	1408.8		1381.2	umhos/cm	98	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05045	mg/L	100.9	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0015	0.0015			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.04821	mg/L	96.3	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	.0005	.04818	mg/L	95.3	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	.0005	.04851	mg/L	95.9	70	130	0.68	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04944	mg/L	98.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04906	mg/L	98	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0035	.04902	mg/L	90.9	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0035	.04835	mg/L	89.6	70	130	1.38	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355891													
WG355802LRB	LRB	12/04/13 17:57				U	mg/L		-0.003	0.003			
WG355802LFB	LFB	12/04/13 17:58	WI131202-2	.2		.187	mg/L	93.5	90	110			
L15734-01DUP	DUP	12/04/13 18:19			U	U	mg/L				0	20	RA
L15734-02LFM	LFM	12/04/13 18:20	WI131202-2	.2	U	.1859	mg/L	93	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355532													
WG355532ICV	ICV	11/26/13 13:36	WI131115-6	.3		.2952	mg/L	98.4	90	110			
WG355532ICB	ICB	11/26/13 13:37				U	mg/L		-0.003	0.003			
WG355556													
WG355526LRB	LRB	11/26/13 17:18				U	mg/L		-0.003	0.003			
WG355526LFB	LFB	11/26/13 17:19	WI131115-4	.2		.2005	mg/L	100.3	90	110			
L15700-01DUP	DUP	11/26/13 17:33			U	U	mg/L				0	20	RA
L15700-02LFM	LFM	11/26/13 17:34	WI131115-4	.2	U	.1794	mg/L	89.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356091													
L15749-01DUP	DUP	12/09/13 18:57			U	U	mg/L				0	20	RA
L15749-02AS	AS	12/09/13 19:32	WI131011-1	30	U	34.5	mg/L	115	90	110			M1
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	1.5		1.52	mg/L	101.3	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	1.5		1.53	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.3	0.3			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1.001		1.05	mg/L	104.9	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1.001	U	1.07	mg/L	106.9	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1.001	U	1.05	mg/L	104.9	85	115	1.89	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1.001	U	1.02	mg/L	101.9	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1.001	U	1.03	mg/L	102.9	85	115	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.98	mg/L	99	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.3	0.3			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.22	0.22			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1.001		.98	mg/L	97.9	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1.001	U	.99	mg/L	98.9	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1.001	U	.99	mg/L	98.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.986	mg/L	99.3	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.06	0.06			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1.0014		1.018	mg/L	101.7	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1.0014	U	1.065	mg/L	104.4	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1.0014	U	1.044	mg/L	102.3	85	115	1.99	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1.0014	.06	1.07	mg/L	100.9	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1.0014	.06	1.072	mg/L	101.1	85	115	0.19	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.994	mg/L	99.7	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.06	0.06			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.044	0.044			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1.0014		.989	mg/L	98.8	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1.0014	.38	1.395	mg/L	101.4	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1.0014	.38	1.391	mg/L	101	70	130	0.29	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.0532	mg/L	106.4	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.05061	mg/L	101.1	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	U	.05147	mg/L	102.8	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	U	.05186	mg/L	103.6	70	130	0.75	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05096	mg/L	101.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04945	mg/L	98.8	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.04973	mg/L	99.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.0501	mg/L	100.1	70	130	0.74	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.936	mg/L	96.8	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.06	0.06			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1		.96	mg/L	96	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1	.08	1.047	mg/L	96.7	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1	.08	1.047	mg/L	96.7	85	115	0	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1	U	.961	mg/L	96.1	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1	U	.959	mg/L	95.9	85	115	0.21	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.942	mg/L	97.1	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.06	0.06			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.044	0.044			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1		.935	mg/L	93.5	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1	U	.979	mg/L	97.9	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1	U	.974	mg/L	97.4	70	130	0.51	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	100		97.49	mg/L	97.5	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.6	0.6			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	49.99695		48.93	mg/L	97.9	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	49.99695	48.4	96.95	mg/L	97.1	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	49.99695	48.4	96.82	mg/L	96.8	85	115	0.13	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	49.99695	.4	49.74	mg/L	98.7	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	49.99695	.4	49.86	mg/L	98.9	85	115	0.24	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	100		97.46	mg/L	97.5	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.6	0.6			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.44	0.44			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	49.99695		48.47	mg/L	96.9	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	49.99695	24.7	74.54	mg/L	99.7	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	49.99695	24.7	74.21	mg/L	99	70	130	0.44	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05285	mg/L	105.7	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0015	0.0015			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.05233	mg/L	104.6	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	.0064	.05808	mg/L	103.3	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	.0064	.05759	mg/L	102.3	70	130	0.85	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05061	mg/L	101.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05054	mg/L	101	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	1000	1000	mg/L	0	70	130			M3
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	1000	1000	mg/L	0	70	130	0	20	M3
WG356143													
WG356143ICV	ICV	12/09/13 19:51	MS131202-2	.05		.0509	mg/L	101.8	90	110			
WG356143ICB	ICB	12/09/13 19:53				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/09/13 19:55				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/09/13 19:56	MS131118-2	.05005		.05029	mg/L	100.5	85	115			
L15749-02LFM	LFM	12/09/13 20:02	MS131118-2	.05005	90	91.5	mg/L	2997	70	130			M3
L15749-02LFMD	LFMD	12/09/13 20:04	MS131118-2	.05005	90	92.5	mg/L	4995	70	130	1.09	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355569													
WG355569CCV1	CCV	11/27/13 12:03	HG131010-4	10		9.47	ng/L	94.7	76.5	123.4			
WG355569CCB1	CCB	11/27/13 12:08				U	ng/L		-0.5	0.5			
WG355569PQV	PQV	11/27/13 12:14	HG131010-6	.5		.36	ng/L	72	70	130			
WG355569LFB	LFB	11/27/13 12:19	HG131010-5	2		1.68	ng/L	84	71	125			
WG355569CCV2	CCV	11/27/13 13:14	HG131010-4	10		9.49	ng/L	94.9	76.5	123.4			
WG355569CCB2	CCB	11/27/13 13:19				U	ng/L		-0.5	0.5			
L15734-01MS	MS	11/27/13 14:00	HG131010-5	2	.6	2.5	ng/L	95	71	125			
L15734-01MSD	MSD	11/27/13 14:05	HG131010-5	2	.6	2.62	ng/L	101	71	125	4.69	24	
WG355569CCV3	CCV	11/27/13 14:10	HG131010-4	10		9.56	ng/L	95.6	76.5	123.4			
WG355569CCB3	CCB	11/27/13 14:15				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L15734***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
L15721-01MS	MS	12/03/13 13:36	HG131010-5	2	1.9	3.57	ng/L	83.5	71	125			
L15721-01MSD	MSD	12/03/13 13:42	HG131010-5	2	1.9	3.73	ng/L	91.5	71	125	4.38	24	
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.02006		.01913	mg/L	95.4	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0015	0.0015			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05		.04807	mg/L	96.1	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05	.0036	.05226	mg/L	97.3	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05	.0036	.0519	mg/L	96.6	70	130	0.69	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05		.05096	mg/L	101.9	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05	U	.05019	mg/L	100.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05	U	.05014	mg/L	100.3	70	130	0.1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05087	mg/L	101.7	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0018	0.0018			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.04895	mg/L	97.8	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	.0006	.04832	mg/L	95.3	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	.0006	.04847	mg/L	95.6	70	130	0.31	20	

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ACZ Project ID: ***L15734***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04906	mg/L	98.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0018	0.0018			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00132	0.00132			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04882	mg/L	97.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.2792	.3295	mg/L	100.5	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.2792	.3256	mg/L	92.7	70	130	1.19	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355989													
WG355989ICV	ICV	12/05/13 18:42	WI131015-1	2.416		2.425	mg/L	100.4	90	110			
WG355989ICB	ICB	12/05/13 18:43				U	mg/L		-0.06	0.06			
WG356002													
WG356002LFB1	LFB	12/06/13 0:32	WI130816-3	2		2.042	mg/L	102.1	90	110			
L15644-02DUP	DUP	12/06/13 0:37			.32	.313	mg/L				2.2	20	
WG356002LFB2	LFB	12/06/13 1:06	WI130816-3	2		2.008	mg/L	100.4	90	110			
L15639-01AS	AS	12/06/13 1:19	WI130816-3	10	7	16.89	mg/L	98.9	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356035													
WG356035ICV	ICV	12/06/13 13:45	WI131021-1	1.003		1.021	mg/L	101.8	90	110			
WG356035ICB	ICB	12/06/13 13:48				U	mg/L		-0.15	0.15			
WG356046													
WG356046LFB	LFB	12/06/13 15:17	WI121218-3	1		1.016	mg/L	101.6	90	110			
L15630-01AS	AS	12/06/13 15:20	WI121218-3	1	U	1.011	mg/L	101.1	90	110			
L15631-01DUP	DUP	12/06/13 15:22			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355781													
WG355781LCSW3	LCSW	12/03/13 15:17	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG355781LCSW6	LCSW	12/03/13 19:57	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355781LCSW9	LCSW	12/03/13 22:59	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355781LCSW12	LCSW	12/04/13 2:24	PCN41777	6		6.06	units	101	5.9	6.1			
L15818-11DUP	DUP	12/04/13 6:07			8.2	8.19	units				0.1	20	
WG355781LCSW15	LCSW	12/04/13 6:24	PCN41777	6		6.06	units	101	5.9	6.1			

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ACZ Project ID: ***L15734***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356080													
WG356080ICV	ICV	12/07/13 12:07	WI131104-3	.65228		.692	mg/L	106.1	90	110			
WG356080ICB	ICB	12/07/13 12:10				U	mg/L		-0.03	0.03			
WG356022LRB	LRB	12/07/13 12:11				U	mg/L		-0.03	0.03			
WG356022LFB	LFB	12/07/13 12:12	WI131206-2	.5		.488	mg/L	97.6	90	110			
L15734-01LFM	LFM	12/07/13 12:18	WI131206-2	.5	.03	.516	mg/L	97.2	90	110			
L15734-02DUP	DUP	12/07/13 12:20			.02	.02	mg/L				0	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	20		19.64	mg/L	98.2	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.9	0.9			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	99.94539		99.5	mg/L	99.6	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	99.94539	8	109.8	mg/L	101.9	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	99.94539	8	109.7	mg/L	101.8	85	115	0.09	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	99.94539	.6	101.8	mg/L	101.3	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	99.94539	.6	101.7	mg/L	101.2	85	115	0.1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	20		19.86	mg/L	99.3	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.9	0.9			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.66	0.66			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	99.94539		97.72	mg/L	97.8	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	99.94539	1.8	102.5	mg/L	100.8	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	99.94539	1.8	101.7	mg/L	100	70	130	0.78	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355538													
WG355538PBW	PBW	11/26/13 15:00				U	mg/L		-20	20			
WG355538LCSW	LCSW	11/26/13 15:01	PCN44256	260		252	mg/L	96.9	80	120			
L15734-01DUP	DUP	11/26/13 15:29			230	232	mg/L				0.9	10	
WG355550													
WG355550PBW	PBW	11/26/13 16:30				U	mg/L		-20	20			
WG355550LCSW	LCSW	11/26/13 16:31	PCN44256	260		254	mg/L	97.7	80	120			
L15734-02DUP	DUP	11/26/13 16:59			180	180	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355534													
WG355534PBW	PBW	11/26/13 13:28				U	mg/L		-15	15			
WG355534LCSW	LCSW	11/26/13 13:30	PCN44254	160		150	mg/L	93.8	80	120			
L15734-02DUP	DUP	11/26/13 14:28			U	5	mg/L				200	10	RA

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ACZ Project ID: ***L15734***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		2	mg/L	100	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.3	0.3			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	1.0009		1.04	mg/L	103.9	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	1.0009	U	1.05	mg/L	104.9	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	1.0009	U	1.05	mg/L	104.9	85	115	0	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	1.0009	U	1.05	mg/L	104.9	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	1.0009	U	1.05	mg/L	104.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		2	mg/L	100	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.3	0.3			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.22	0.22			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	1.0009		1.03	mg/L	102.9	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	1.0009	U	1.05	mg/L	104.9	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	1.0009	U	1.06	mg/L	105.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.0524	mg/L	104.8	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.04974	mg/L	99.4	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	.0003	.05673	mg/L	112.7	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	.0003	.05632	mg/L	111.9	70	130	0.73	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05126	mg/L	102.5	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04983	mg/L	99.6	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0001	.05583	mg/L	111.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0001	.05564	mg/L	111	70	130	0.34	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355931													
WG355931ICV	ICV	12/10/13 16:52	MS131202-2	.02002		.01849	mg/L	92.4	90	110			
WG355931ICB	ICB	12/10/13 16:55				U	mg/L		-0.00015	0.00015			
WG355931LFB	LFB	12/10/13 16:58	MS131118-2	.01001		.008911	mg/L	89	85	115			
L15643-02AS	AS	12/10/13 17:09	MS131118-2	.5005	U	.4279	mg/L	85.5	70	130			
L15643-02ASD	ASD	12/10/13 17:12	MS131118-2	.5005	U	.3681	mg/L	73.5	70	130	15.03	20	

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ACZ Project ID: ***L15734***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02002		.01945	mg/L	97.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.00015	0.00015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.01001		.009143	mg/L	91.3	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.01001	U	.008134	mg/L	81.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.01001	U	.008324	mg/L	83.2	70	130	2.31	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	100		99.07	mg/L	99.1	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.9	0.9			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	100.0204		99.28	mg/L	99.3	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	100.0204	86.1	183.3	mg/L	97.2	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	100.0204	86.1	184.1	mg/L	98	85	115	0.44	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	100.0204	23.4	123.4	mg/L	100	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	100.0204	23.4	123.4	mg/L	100	85	115	0	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	100		99.81	mg/L	99.8	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.9	0.9			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.66	0.66			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	100.0204		97.36	mg/L	97.3	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	100.0204	15.8	116.1	mg/L	100.3	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	100.0204	15.8	114.7	mg/L	98.9	70	130	1.21	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.995	mg/L	99.8	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.03	0.03			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	.5		.492	mg/L	98.4	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	.5	.73	1.203	mg/L	94.6	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	.5	.73	1.202	mg/L	94.4	85	115	0.08	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	.5	.05	.546	mg/L	99.2	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	.5	.05	.545	mg/L	99	85	115	0.18	20	

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ACZ Project ID: ***L15734***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		2.011	mg/L	100.6	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.03	0.03			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.022	0.022			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	.5		.479	mg/L	95.8	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	.5	.23	.723	mg/L	98.6	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	.5	.23	.716	mg/L	97.2	70	130	0.97	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
L15749-01DUP	DUP	12/09/13 18:57			911	938	mg/L				2.9	20	
L15749-02AS	AS	12/09/13 19:32	WI131011-1	600	1200	1810	mg/L	101.7	90	110			
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30	mg/L	100	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05267	mg/L	105.3	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.05045	mg/L	100.8	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	U	.05174	mg/L	103.4	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	U	.05208	mg/L	104.1	70	130	0.65	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05245	mg/L	104.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05074	mg/L	101.4	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0003	.05192	mg/L	103.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0003	.05308	mg/L	105.5	70	130	2.21	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05015		.05039	mg/L	100.5	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05005		.0466	mg/L	93.1	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05005	U	.04749	mg/L	94.9	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05005	U	.04689	mg/L	93.7	70	130	1.27	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05015		.05255	mg/L	104.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05081	mg/L	101.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.05013	mg/L	100.2	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.05059	mg/L	101.1	70	130	0.91	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.9328	mg/L	96.6	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.015	0.015			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	.999		.9937	mg/L	99.5	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	.999	.006	.9997	mg/L	99.5	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	.999	.006	.9965	mg/L	99.1	85	115	0.32	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	.999	U	.9951	mg/L	99.6	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	.999	U	.9967	mg/L	99.8	85	115	0.16	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.95	mg/L	97.5	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.015	0.015			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.011	0.011			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	.999		.9749	mg/L	97.6	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	.999	.017	1.014	mg/L	99.8	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	.999	.017	1.006	mg/L	99	70	130	0.79	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.05118	mg/L	102.4	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0003	0.0003			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.05		.04986	mg/L	99.7	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.05	.0016	.05308	mg/L	103	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.05	.0016	.05335	mg/L	103.5	70	130	0.51	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05195	mg/L	103.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05		.05115	mg/L	102.3	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05	.004	.05634	mg/L	104.7	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05	.004	.05799	mg/L	108	70	130	2.89	20	

SPF Water Engineering

ACZ Project ID: ***L15734***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355892													
WG355892ICV	ICV	12/05/13 1:23	MS131018-2	.05		.04858	mg/L	97.2	90	110			
WG355892ICB	ICB	12/05/13 1:26				U	mg/L		-0.0006	0.0006			
WG355892LFB	LFB	12/05/13 1:30	MS131118-2	.0501		.04919	mg/L	98.2	85	115			
L15734-02AS	AS	12/05/13 2:28	MS131118-2	.0501	.0043	.05433	mg/L	99.9	70	130			
L15734-02ASD	ASD	12/05/13 2:31	MS131118-2	.0501	.0043	.05441	mg/L	100	70	130	0.15	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.0489	mg/L	97.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0006	0.0006			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00044	0.00044			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.05061	mg/L	101	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.0017	.05334	mg/L	103.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.0017	.05217	mg/L	100.7	70	130	2.22	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355676													
WG355676ICV	ICV	12/02/13 23:58	II131113-1	2		1.957	mg/L	97.9	95	105			
WG355676ICB	ICB	12/03/13 0:04				U	mg/L		-0.03	0.03			
WG355676LFB	LFB	12/03/13 0:16	II131119-3	.5		.499	mg/L	99.8	85	115			
L15634-01AS	AS	12/03/13 0:29	II131119-3	.5	U	.508	mg/L	101.6	85	115			
L15634-01ASD	ASD	12/03/13 0:32	II131119-3	.5	U	.509	mg/L	101.8	85	115	0.2	20	
L15744-02AS	AS	12/03/13 1:12	II131119-3	.5	U	.511	mg/L	102.2	85	115			
L15744-02ASD	ASD	12/03/13 1:15	II131119-3	.5	U	.514	mg/L	102.8	85	115	0.59	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355771													
WG355771ICV	ICV	12/03/13 15:12	II131111-1	2		1.98	mg/L	99	95	105			
WG355771ICB	ICB	12/03/13 15:18				U	mg/L		-0.03	0.03			
WG355689LRB	LRB	12/03/13 15:31				U	mg/L		-0.022	0.022			
WG355689LFB	LFB	12/03/13 15:34	II131119-3	.5		.507	mg/L	101.4	85	115			
L15716-01LFM	LFM	12/03/13 16:25	II131119-3	.5	U	.512	mg/L	102.4	70	130			
L15716-01LFMD	LFMD	12/03/13 16:28	II131119-3	.5	U	.507	mg/L	101.4	70	130	0.98	20	

SPF Water Engineering ACZ Project ID: ***L15734***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15734-01	WG356064	Manganese, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355891	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355556	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356080	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355534	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L15734-02	WG356143	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355891	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355556	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356080	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355534	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15734
Date Received: 11/25/2013 09:58
Received By: mtb
Date Printed: 11/25/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15734-02 : A mercury 1631 total and dissolved container not received and the associated analysis could not be run.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3897	5.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L15734

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	#SPF-2014-GW							
Leslie Gulch	11/20/13 11:00		8	X							
Owyhee DS	11/20/13 15:10		8	X	No. HG-1631 containers LZB 11.25.13						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/20/13 6:00	LZB	11.25.13 9:58

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15734 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 16, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15770

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 27, 2013. This project has been assigned to ACZ's project number, L15770. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15770. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 15, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4

ACZ Sample ID: ***L15770-01***
Date Sampled: *11/21/13 12:10*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 10:38	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:33	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/09/13 12:04	mla
Total Hot Plate Digestion	M200.2 ICP-MS								12/09/13 12:46	las
Total Hot Plate Digestion	M200.2 ICP								12/05/13 17:55	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4

ACZ Sample ID: ***L15770-01***
Date Sampled: *11/21/13 12:10*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	12/04/13 15:35	aeb
Aluminum, total	M200.7 ICP	1	1.13			mg/L	0.03	0.2	12/06/13 16:03	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 20:44	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/11/13 0:23	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0118			mg/L	0.0002	0.001	12/05/13 20:44	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0116			mg/L	0.0002	0.001	12/11/13 0:23	msh
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/04/13 15:35	aeb
Barium, total	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	12/06/13 16:03	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:44	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	12/11/13 0:23	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 15:35	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/06/13 16:03	aeb
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	12/12/13 18:28	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/06/13 16:03	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:44	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:23	msh
Calcium, dissolved	M200.7 ICP	1	3.6			mg/L	0.2	1	12/04/13 15:35	aeb
Calcium, total	M200.7 ICP	1	4.2			mg/L	0.2	1	12/06/13 16:03	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 20:44	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/11/13 0:23	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	12/05/13 20:44	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B	*	mg/L	0.00005	0.0003	12/11/13 0:23	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 20:44	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/11/13 0:23	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:35	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:03	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 15:35	aeb
Iron, total	M200.7 ICP	1	0.42			mg/L	0.02	0.05	12/06/13 16:03	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:44	pmc
Lead, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	12/11/13 0:23	msh
Lithium, dissolved	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	12/04/13 15:35	aeb
Lithium, total	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	12/06/13 16:03	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/04/13 15:35	aeb
Magnesium, total	M200.7 ICP	1	0.2	B		mg/L	0.2	1	12/06/13 16:03	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0056		*	mg/L	0.0005	0.003	12/05/13 20:44	pmc
Manganese, total	M200.8 ICP-MS	1	0.0129		*	mg/L	0.0005	0.003	12/11/13 19:26	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 10:33	las
Mercury, total	M1631, Atomic Fluorescence	2	1.1			ng/L	0.4	1	12/03/13 13:57	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	12/05/13 20:44	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0088			mg/L	0.0005	0.003	12/11/13 0:23	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 20:44	pmc
Nickel, total	M200.8 ICP-MS	1		U	*	mg/L	0.0006	0.003	12/11/13 0:23	msh
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.3	2	12/04/13 15:35	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4

ACZ Sample ID: ***L15770-01***
Date Sampled: *11/21/13 12:10*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.3	2	12/06/13 16:03	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:35	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:03	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/05/13 20:44	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/11/13 0:23	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:44	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/11/13 0:23	msh
Sodium, dissolved	M200.7 ICP	1	145			mg/L	0.3	2	12/04/13 15:35	aeb
Sodium, total	M200.7 ICP	1	148			mg/L	0.3	2	12/06/13 16:03	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/04/13 15:35	aeb
Strontium, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	12/06/13 16:03	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:44	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:23	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 20:44	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/11/13 0:23	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 15:35	aeb
Titanium, total	M200.7 ICP	1	0.012	B		mg/L	0.005	0.03	12/06/13 16:03	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:44	pmc
Uranium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	12/11/13 0:23	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/05/13 20:44	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	12/11/13 0:23	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 15:35	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/06/13 16:03	aeb

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4

ACZ Sample ID: ***L15770-01***
Date Sampled: *11/21/13 12:10*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	177			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1	14	B		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	191			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	27.0		*	mg/L	0.5	2.5	12/09/13 22:32	tcd
Conductivity @25C	SM2510B	1	665			umhos/cm	1	10	12/04/13 21:35	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:01	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:20	bsu
Fluoride	M300.0 - Ion Chromatography	1	2.21		*	mg/L	0.1	0.5	12/09/13 22:32	tcd
Hardness as CaCO3	SM2340B - Calculation		9			mg/L	1	7	12/16/13 13:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/07/13 0:59	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.07	B	*	mg/L	0.05	0.5	12/09/13 17:39	mpb
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/09/13 17:28	tcd
Residue, Filterable (TDS) @180C	SM2540C	1	400			mg/L	10	20	11/27/13 12:33	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1	21		*	mg/L	5	20	11/27/13 14:26	mss3
Sulfate	M300.0 - Ion Chromatography	1	89.1			mg/L	0.5	2.5	12/09/13 22:32	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4-DUP

ACZ Sample ID: ***L15770-02***
Date Sampled: *11/21/13 12:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 10:57	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:38	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/09/13 12:19	mla
Total Hot Plate Digestion	M200.2 ICP-MS								12/09/13 12:55	las
Total Hot Plate Digestion	M200.2 ICP								12/05/13 18:07	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4-DUP

ACZ Sample ID: ***L15770-02***
Date Sampled: *11/21/13 12:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	12/04/13 15:44	aeb
Aluminum, total	M200.7 ICP	1	0.84		*	mg/L	0.03	0.2	12/06/13 16:06	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 20:48	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/11/13 0:26	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0119			mg/L	0.0002	0.001	12/05/13 20:48	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0113			mg/L	0.0002	0.001	12/11/13 0:26	msh
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/04/13 15:44	aeb
Barium, total	M200.7 ICP	1	0.007	B		mg/L	0.003	0.02	12/06/13 16:06	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:48	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/11/13 0:26	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 15:44	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/06/13 16:06	aeb
Boron, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	12/04/13 15:44	aeb
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/06/13 16:06	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:48	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:26	msh
Calcium, dissolved	M200.7 ICP	1	3.5			mg/L	0.2	1	12/04/13 15:44	aeb
Calcium, total	M200.7 ICP	1	4			mg/L	0.2	1	12/06/13 16:06	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 20:48	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/11/13 0:26	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/05/13 20:48	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B	*	mg/L	0.00005	0.0003	12/11/13 0:26	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 20:48	pmc
Copper, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	12/11/13 0:26	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:44	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:06	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	12/04/13 15:44	aeb
Iron, total	M200.7 ICP	1	0.33		*	mg/L	0.02	0.05	12/06/13 16:06	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:48	pmc
Lead, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	12/11/13 0:26	msh
Lithium, dissolved	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	12/04/13 15:44	aeb
Lithium, total	M200.7 ICP	1	0.09	B		mg/L	0.02	0.1	12/06/13 16:06	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/04/13 15:44	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/06/13 16:06	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0054		*	mg/L	0.0005	0.003	12/05/13 20:48	pmc
Manganese, total	M200.8 ICP-MS	1	0.0116		*	mg/L	0.0005	0.003	12/11/13 19:29	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 10:38	las
Mercury, total	M1631, Atomic Fluorescence	2	0.5	B	*	ng/L	0.4	1	12/03/13 14:02	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0097			mg/L	0.0005	0.003	12/05/13 20:48	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0088			mg/L	0.0005	0.003	12/11/13 0:26	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 20:48	pmc
Nickel, total	M200.8 ICP-MS	1		U	*	mg/L	0.0006	0.003	12/11/13 0:26	msh
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.3	2	12/04/13 15:44	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4-DUP

ACZ Sample ID: ***L15770-02***
Date Sampled: *11/21/13 12:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.3	2	12/06/13 16:06	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:44	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:06	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/05/13 20:48	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/11/13 0:26	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:48	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/11/13 0:26	msh
Sodium, dissolved	M200.7 ICP	1	146			mg/L	0.3	2	12/04/13 15:44	aeb
Sodium, total	M200.7 ICP	1	149			mg/L	0.3	2	12/06/13 16:06	aeb
Strontium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/04/13 15:44	aeb
Strontium, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	12/06/13 16:06	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:48	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:26	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 20:48	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/11/13 0:26	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 15:44	aeb
Titanium, total	M200.7 ICP	1	0.010	B		mg/L	0.005	0.03	12/06/13 16:06	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:48	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/11/13 0:26	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/05/13 20:48	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	12/11/13 0:26	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 15:44	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/06/13 16:06	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-4-DUP

ACZ Sample ID: ***L15770-02***
Date Sampled: *11/21/13 12:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	177			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1	14	B		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	191			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	27.0		*	mg/L	0.5	2.5	12/09/13 22:49	tcd
Conductivity @25C	SM2510B	1	666			umhos/cm	1	10	12/04/13 21:44	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:02	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:21	bsu
Fluoride	M300.0 - Ion Chromatography	1	2.21		*	mg/L	0.1	0.5	12/09/13 22:49	tcd
Hardness as CaCO3	SM2340B - Calculation		9			mg/L	1	7	12/16/13 13:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/07/13 1:00	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/09/13 17:58	mpb
pH (lab)	SM4500H+ B									
pH		1	8.7	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/09/13 17:30	tcd
Residue, Filterable (TDS) @180C	SM2540C	1	410			mg/L	10	20	11/27/13 12:34	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1	12	B	*	mg/L	5	20	11/27/13 14:27	mss3
Sulfate	M300.0 - Ion Chromatography	1	89.1			mg/L	0.5	2.5	12/09/13 22:49	tcd

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-4

ACZ Sample ID: ***L15770-03***
Date Sampled: *11/21/13 10:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:07	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:43	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/09/13 12:35	mla
Total Hot Plate Digestion	M200.2 ICP-MS								12/09/13 13:04	las
Total Hot Plate Digestion	M200.2 ICP								12/05/13 18:19	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-4

ACZ Sample ID: ***L15770-03***
Date Sampled: *11/21/13 10:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	12/04/13 15:48	aeb
Aluminum, total	M200.7 ICP	1	6.52		*	mg/L	0.03	0.2	12/06/13 16:10	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 20:51	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/11/13 0:30	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0133			mg/L	0.0002	0.001	12/05/13 20:51	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0221			mg/L	0.0002	0.001	12/11/13 0:30	msh
Barium, dissolved	M200.7 ICP	1	0.007	B		mg/L	0.003	0.02	12/04/13 15:48	aeb
Barium, total	M200.7 ICP	1	0.018	B		mg/L	0.003	0.02	12/06/13 16:10	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:51	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00033			mg/L	0.00005	0.0003	12/11/13 0:30	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 15:48	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/06/13 16:10	aeb
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	12/04/13 15:48	aeb
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/06/13 16:10	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:51	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:30	msh
Calcium, dissolved	M200.7 ICP	1	8.6			mg/L	0.2	1	12/04/13 15:48	aeb
Calcium, total	M200.7 ICP	1	12.3			mg/L	0.2	1	12/06/13 16:10	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 20:51	pmc
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/11/13 0:30	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	12/05/13 20:51	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00049		*	mg/L	0.00005	0.0003	12/11/13 0:30	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 20:51	pmc
Copper, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.003	12/11/13 0:30	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:48	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:10	aeb
Iron, dissolved	M200.7 ICP	1	0.26			mg/L	0.02	0.05	12/04/13 15:48	aeb
Iron, total	M200.7 ICP	1	23.50		*	mg/L	0.02	0.05	12/06/13 16:10	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:51	pmc
Lead, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0001	0.0005	12/11/13 0:30	msh
Lithium, dissolved	M200.7 ICP	1	0.10			mg/L	0.02	0.1	12/04/13 15:48	aeb
Lithium, total	M200.7 ICP	1	0.10			mg/L	0.02	0.1	12/06/13 16:10	aeb
Magnesium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.2	1	12/04/13 15:48	aeb
Magnesium, total	M200.7 ICP	1	1.5			mg/L	0.2	1	12/06/13 16:10	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0388		*	mg/L	0.0005	0.003	12/05/13 20:51	pmc
Manganese, total	M200.8 ICP-MS	1	0.1679		*	mg/L	0.0005	0.003	12/11/13 0:30	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 10:43	las
Mercury, total	M1631, Atomic Fluorescence	5	7			ng/L	1	3	12/03/13 14:07	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0114			mg/L	0.0005	0.003	12/05/13 20:51	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0112			mg/L	0.0005	0.003	12/11/13 0:30	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 20:51	pmc
Nickel, total	M200.8 ICP-MS	1	0.0012	B	*	mg/L	0.0006	0.003	12/11/13 0:30	msh
Potassium, dissolved	M200.7 ICP	1	1	B		mg/L	0.3	2	12/04/13 15:48	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-4

ACZ Sample ID: ***L15770-03***
Date Sampled: *11/21/13 10:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.2	B		mg/L	0.3	2	12/06/13 16:10	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 15:48	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/06/13 16:10	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/05/13 20:51	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/11/13 0:30	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 20:51	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/11/13 0:30	msh
Sodium, dissolved	M200.7 ICP	1	181			mg/L	0.3	2	12/04/13 15:48	aeb
Sodium, total	M200.7 ICP	1	181			mg/L	0.3	2	12/06/13 16:10	aeb
Strontium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	12/04/13 15:48	aeb
Strontium, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/06/13 16:10	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:51	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/11/13 0:30	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 20:51	pmc
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	12/11/13 0:30	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 15:48	aeb
Titanium, total	M200.7 ICP	1	0.026	B		mg/L	0.005	0.03	12/06/13 16:10	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 20:51	pmc
Uranium, total	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	12/11/13 0:30	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/05/13 20:51	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0002	0.001	12/11/13 0:30	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 15:48	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/06/13 16:10	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-4

ACZ Sample ID: ***L15770-03***
Date Sampled: *11/21/13 10:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	183			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1	10	B		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	193			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	5	42.6		*	mg/L	2.5	12.5	12/09/13 23:07	tcd
Conductivity @25C	SM2510B	1	853			umhos/cm	1	10	12/04/13 21:53	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:03	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:21	bsu
Fluoride	M300.0 - Ion Chromatography	5	1.90	B	*	mg/L	0.5	2.5	12/09/13 23:07	tcd
Hardness as CaCO3	SM2340B - Calculation		24			mg/L	1	7	12/16/13 13:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/07/13 1:01	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.09	B	*	mg/L	0.05	0.5	12/09/13 17:44	mpb
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.14		*	mg/L	0.01	0.05	12/09/13 17:33	tcd
Residue, Filterable (TDS) @180C	SM2540C	1	540			mg/L	10	20	11/27/13 12:36	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1	208		*	mg/L	5	20	11/27/13 14:28	mss3
Sulfate	M300.0 - Ion Chromatography	5	145			mg/L	2.5	12.5	12/09/13 23:07	tcd

** Please refer to Qualifier Reports for details.*

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15770***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870PBW1	PBW	12/04/13 15:50				U	mg/L		-20	20			
WG355870LCSW2	LCSW	12/04/13 16:04	WC131126-	820.0001		743	mg/L	90.6	90	110			
WG355870LCSW5	LCSW	12/04/13 21:04	WC131126-	820.0001		772.2	mg/L	94.2	90	110			
WG355870PBW2	PBW	12/04/13 21:12				U	mg/L		-20	20			
L15772-02DUP	DUP	12/04/13 22:46			165	165.1	mg/L				0.1	20	
WG355870LCSW8	LCSW	12/05/13 0:26	WC131126-	820.0001		764.8	mg/L	93.3	90	110			
WG355870PBW3	PBW	12/05/13 0:35				2.1	mg/L		-20	20			
WG355870LCSW11	LCSW	12/05/13 3:32	WC131126-	820.0001		773.9	mg/L	94.4	90	110			
WG355870PBW4	PBW	12/05/13 3:40				2.2	mg/L		-20	20			
WG355870LCSW14	LCSW	12/05/13 6:40	WC131126-	820.0001		777.4	mg/L	94.8	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2.002	mg/L	100.1	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.09	0.09			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1.0011		1.075	mg/L	107.4	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2.0022	U	2.19	mg/L	109.4	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2.0022	U	2.184	mg/L	109.1	85	115	0.27	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.975	mg/L	98.8	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.09	0.09			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.066	0.066			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1.0011		1.015	mg/L	101.4	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1.0011	2.83	3.927	mg/L	109.6	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1.0011	2.83	3.879	mg/L	104.8	70	130	1.23	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1.0011	6.52	17.93	mg/L	1139.7	70	130			M3
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1.0011	6.52	17.03	mg/L	1049.8	70	130	5.15	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.02		.02022	mg/L	101.1	90	110			
WG355906ICB	ICB	12/05/13 20:28				.00062	mg/L		-0.0012	0.0012			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.01		.01068	mg/L	106.8	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.01	U	.0098	mg/L	98	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.01	U	.01013	mg/L	101.3	70	130	3.31	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.02		.02093	mg/L	104.7	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0012	0.0012			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00088	0.00088			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.01		.01006	mg/L	100.6	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.01	U	.00751	mg/L	75.1	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.01	U	.00736	mg/L	73.6	70	130	2.02	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.05316	mg/L	106.3	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0006	0.0006			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.04966	mg/L	99.2	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.0003	.05499	mg/L	109.3	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.0003	.05661	mg/L	112.5	70	130	2.9	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05257	mg/L	105.1	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0006	0.0006			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00044	0.00044			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04843	mg/L	96.8	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.0159	.06406	mg/L	96.2	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.0159	.0672	mg/L	102.5	70	130	4.78	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		1.961	mg/L	98.1	95	105			
WG355837ICB	ICB	12/04/13 14:53				.005	mg/L		-0.009	0.009			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	.5		.5021	mg/L	100.4	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	1	.058	1.0578	mg/L	100	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	1	.058	1.0472	mg/L	98.9	85	115	1.01	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.9592	mg/L	98	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.009	0.009			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.0066	0.0066			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	.5		.4755	mg/L	95.1	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	.5	.021	.4989	mg/L	95.6	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	.5	.021	.4913	mg/L	94.1	70	130	1.54	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	.5	.018	.496	mg/L	95.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	.5	.018	.4981	mg/L	96	70	130	0.42	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04637	mg/L	92.7	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.00015	0.00015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.0501		.04941	mg/L	98.6	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.0501	.00265	.05157	mg/L	97.6	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.0501	.00265	.05247	mg/L	99.4	70	130	1.73	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05041	mg/L	100.8	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.00015	0.00015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00011	0.00011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.0501		.04716	mg/L	94.1	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.0501	.0225	.07286	mg/L	100.5	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.0501	.0225	.07676	mg/L	108.3	70	130	5.21	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2.005	mg/L	100.3	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.12	0.12			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1		1.034	mg/L	103.4	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2	U	2.098	mg/L	104.9	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2	U	2.05	mg/L	102.5	85	115	2.31	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.998	mg/L	99.9	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.12	0.12			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.088	0.088			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1		1.019	mg/L	101.9	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1	U	1.035	mg/L	103.5	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1	U	1.025	mg/L	102.5	70	130	0.97	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1	U	1	mg/L	100	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1	U	1.032	mg/L	103.2	70	130	3.15	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2.037	mg/L	101.9	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.03	0.03			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	.5005		.528	mg/L	105.5	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	1.001	.66	1.697	mg/L	103.6	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	1.001	.66	1.702	mg/L	104.1	85	115	0.29	20	
WG356352													
WG356352ICV	ICV	12/12/13 18:06	II131113-1	2		2.021	mg/L	101.1	95	105			
WG356352ICB	ICB	12/12/13 18:12				U	mg/L		-0.03	0.03			
WG356352LFB	LFB	12/12/13 18:25	II131209-3	.5005		.525	mg/L	104.9	85	115			
L15893-01AS	AS	12/12/13 18:37	II131209-3	.5005	.15	.675	mg/L	104.9	85	115			
L15893-01ASD	ASD	12/12/13 18:40	II131209-3	.5005	.15	.679	mg/L	105.7	85	115	0.59	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.992	mg/L	99.6	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.03	0.03			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.022	0.022			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	.5005		.485	mg/L	96.9	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	.5005	U	.493	mg/L	98.5	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	.5005	U	.487	mg/L	97.3	70	130	1.22	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	.5005	.14	.61	mg/L	93.9	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	.5005	.14	.601	mg/L	92.1	70	130	1.49	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04863	mg/L	97.3	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.0501		.05167	mg/L	103.1	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.0501	.005	.05696	mg/L	103.7	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.0501	.005	.05808	mg/L	105.9	70	130	1.95	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.04944	mg/L	98.9	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.0501		.04705	mg/L	93.9	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.0501	.1168	.16204	mg/L	90.3	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.0501	.1168	.16232	mg/L	90.9	70	130	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	100		98.53	mg/L	98.5	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.6	0.6			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	68.00225		69.89	mg/L	102.8	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	136.0045	25.6	167.46	mg/L	104.3	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	136.0045	25.6	165.68	mg/L	103	85	115	1.07	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	100		99.29	mg/L	99.3	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.6	0.6			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.44	0.44			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	68.00225		68.4	mg/L	100.6	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	68.00225	24.3	93.02	mg/L	101.1	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	68.00225	24.3	92.13	mg/L	99.7	70	130	0.96	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	68.00225	12.3	80.71	mg/L	100.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	68.00225	12.3	80.65	mg/L	100.5	70	130	0.07	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30.3	mg/L	101	90	110			
L15750-03DUP	DUP	12/09/13 21:02			U	U	mg/L				0	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	39	99.7	mg/L	101.2	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04992	mg/L	99.8	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0015	0.0015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05166	mg/L	103.2	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.0008	.04984	mg/L	98	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.0008	.05137	mg/L	101	70	130	3.02	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0015	0.0015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.0011	0.0011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04773	mg/L	95.4	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.016	.0601	mg/L	88.1	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.016	.0611	mg/L	90.1	70	130	1.65	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.0483	mg/L	96.6	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.00015	0.00015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05197	mg/L	103.8	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.02313	.07279	mg/L	99.2	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.02313	.07345	mg/L	100.5	70	130	0.9	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05099	mg/L	102	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.00015	0.00015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00011	0.00011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04981	mg/L	99.5	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.7192	.7538	mg/L	69.1	70	130			M3
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.7192	.7402	mg/L	42	70	130	1.82	20	M3

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW1	LCSW	12/04/13 15:52	PCN42442	1408.8		1421.2	umhos/cm	100.9	90	110			
WG355870LCSW4	LCSW	12/04/13 20:52	PCN42442	1408.8		1404.8	umhos/cm	99.7	90	110			
L15772-02DUP	DUP	12/04/13 22:46			575	578	umhos/cm				0.5	20	
WG355870LCSW7	LCSW	12/05/13 0:12	PCN42442	1408.8		1392.6	umhos/cm	98.9	90	110			
WG355870LCSW10	LCSW	12/05/13 3:20	PCN42442	1408.8		1382.3	umhos/cm	98.1	90	110			
WG355870LCSW13	LCSW	12/05/13 6:28	PCN42442	1408.8		1375.2	umhos/cm	97.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04953	mg/L	99.1	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0015	0.0015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05104	mg/L	102	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.023	.07221	mg/L	98.3	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.023	.07383	mg/L	101.6	70	130	2.22	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05019	mg/L	100.4	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0015	0.0015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.0011	0.0011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04762	mg/L	95.1	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.27	.3272	mg/L	114.3	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.27	.334	mg/L	127.9	70	130	2.06	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355900													
WG355836LRB	LRB	12/04/13 18:57				U	mg/L		-0.003	0.003			
WG355836LFB	LFB	12/04/13 18:58	WI131202-2	.2		.1849	mg/L	92.5	90	110			
L15768-01DUP	DUP	12/04/13 19:00			U	U	mg/L				0	20	RA
L15770-01LFM	LFM	12/04/13 19:01	WI131202-2	.2	U	.1813	mg/L	90.7	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355780LRB	LRB	12/04/13 17:14				U	mg/L		-0.003	0.003			
WG355780LFB	LFB	12/04/13 17:15	WI131202-4	.2		.1964	mg/L	98.2	90	110			
L15728-01DUP	DUP	12/04/13 17:16			U	U	mg/L				0	20	RA
L15728-02LFM	LFM	12/04/13 17:18	WI131202-4	.2	U	.1877	mg/L	93.9	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	1.5		1.52	mg/L	101.3	90	110			
L15750-03DUP	DUP	12/09/13 21:02			13.5	13.6	mg/L				0.7	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	3	.54	3.74	mg/L	106.7	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	1.5		1.53	mg/L	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L15770***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2	mg/L	100	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.3	0.3			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2.002	U	2.06	mg/L	102.9	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2.002	U	1.95	mg/L	97.4	85	115	5.49	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.96	mg/L	98	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.3	0.3			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.22	0.22			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1.001		.99	mg/L	98.9	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1.001	U	1	mg/L	99.9	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1.001	U	1	mg/L	99.9	70	130	0	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1.001	U	.98	mg/L	97.9	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1.001	U	1.02	mg/L	101.9	70	130	4	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2.023	mg/L	101.2	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.06	0.06			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1.0014		1.044	mg/L	104.3	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2.0028	.75	2.748	mg/L	100.8	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2.0028	.75	2.736	mg/L	100.2	85	115	0.44	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.964	mg/L	98.2	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.06	0.06			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.044	0.044			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1.0014		.998	mg/L	99.7	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1.0014	.04	1.011	mg/L	97	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1.0014	.04	.994	mg/L	95.3	70	130	1.7	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1.0014	23.7	26.87	mg/L	336.5	70	130			M3
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1.0014	23.7	26.85	mg/L	334.5	70	130	0.07	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.05039	mg/L	100.8	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05057	mg/L	101	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	U	.05093	mg/L	101.8	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	U	.05207	mg/L	104	70	130	2.21	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05286	mg/L	105.7	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04858	mg/L	97.1	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.0088	.05742	mg/L	97.1	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.0088	.05796	mg/L	98.2	70	130	0.94	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		1.957	mg/L	97.9	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.06	0.06			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1		.979	mg/L	97.9	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2	.48	2.394	mg/L	95.7	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2	.48	2.38	mg/L	95	85	115	0.59	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.918	mg/L	95.9	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.06	0.06			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.044	0.044			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1		.945	mg/L	94.5	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1	U	.964	mg/L	96.4	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1	U	.951	mg/L	95.1	70	130	1.36	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1	.1	1.036	mg/L	93.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1	.1	1.044	mg/L	94.4	70	130	0.77	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	100		96.79	mg/L	96.8	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.6	0.6			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	49.99695		49.32	mg/L	98.6	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	99.9939	4.5	104.86	mg/L	100.4	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	99.9939	4.5	104.18	mg/L	99.7	85	115	0.65	20	

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ACZ Project ID: ***L15770***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	100		97.46	mg/L	97.5	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.6	0.6			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.44	0.44			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	49.99695		48.07	mg/L	96.1	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	49.99695	10.2	58.31	mg/L	96.2	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	49.99695	10.2	57.91	mg/L	95.4	70	130	0.69	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	49.99695	1.5	50.61	mg/L	98.2	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	49.99695	1.5	50.36	mg/L	97.7	70	130	0.5	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04968	mg/L	99.4	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0015	0.0015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05135	mg/L	102.6	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	11.1	11.17	mg/L	139.9	70	130			M3
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	11.1	11.02	mg/L	-159.8	70	130	1.35	20	M3

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05281	mg/L	105.6	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0015	0.0015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.0011	0.0011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.05029	mg/L	100.5	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	119	115.84	mg/L	-6313.7	70	130			M3
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	119	112.12	mg/L	-13746.3	70	130	3.26	20	M3
WG356277													
WG356277ICV	ICV	12/11/13 18:58	MS131202-2	.05		.05065	mg/L	101.3	90	110			
WG356277ICB	ICB	12/11/13 19:02				U	mg/L		-0.0015	0.0015			
WG356088LRB	LRB	12/11/13 19:05				U	mg/L		-0.0011	0.0011			
WG356088LFB	LFB	12/11/13 19:08	MS131118-2	.05005		.04884	mg/L	97.6	85	115			
L15750-02LFM	LFM	12/11/13 19:15	MS131118-2	.05005	117	116.5	mg/L	-999	70	130			M3
L15750-02LFMD	LFMD	12/11/13 19:19	MS131118-2	.05005	117	119.1	mg/L	4195.8	70	130	2.21	20	M3

SPF Water Engineering

ACZ Project ID: ***L15770***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15770-03MS	MS	12/06/13 10:48	HG131206-6	2	U	2.02	ng/L	101	71	125			
L15770-03MSD	MSD	12/06/13 10:53	HG131206-6	2	U	2.06	ng/L	103	71	125	1.96	24	
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
L15721-01MS	MS	12/03/13 13:36	HG131010-5	2	1.9	3.57	ng/L	83.5	71	125			
L15721-01MSD	MSD	12/03/13 13:42	HG131010-5	2	1.9	3.73	ng/L	91.5	71	125	4.38	24	
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.02006		.01933	mg/L	96.4	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0015	0.0015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05		.0506	mg/L	101.2	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05	U	.05018	mg/L	100.4	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05	U	.05084	mg/L	101.7	70	130	1.31	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.02006		.01925	mg/L	96	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0015	0.0015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.0011	0.0011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05		.04622	mg/L	92.4	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05	.005	.0497	mg/L	89.4	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05	.005	.0495	mg/L	89	70	130	0.4	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04875	mg/L	97.5	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0018	0.0018			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05036	mg/L	100.6	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.1021	.1487	mg/L	93.1	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.1021	.1528	mg/L	101.3	70	130	2.72	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.04989	mg/L	99.8	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0018	0.0018			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00132	0.00132			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04676	mg/L	93.4	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	1.24	1.3196	mg/L	159	70	130			M3
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	1.24	1.3458	mg/L	211.4	70	130	1.97	20	M3

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356065													
WG356065ICV	ICV	12/06/13 19:12	WI131015-1	2.416		2.407	mg/L	99.6	90	110			
WG356065ICB	ICB	12/06/13 19:14				U	mg/L		-0.06	0.06			
WG356073													
WG356073LFB1	LFB	12/07/13 0:31	WI130816-3	2		2.066	mg/L	103.3	90	110			
L15768-02AS	AS	12/07/13 0:50	WI130816-3	2	.03	2.145	mg/L	105.8	90	110			
L15768-03DUP	DUP	12/07/13 0:52			U	U	mg/L				0	20	RA
WG356073LFB2	LFB	12/07/13 1:05	WI130816-3	2		2.041	mg/L	102.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L15770***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356136													
WG356136ICV	ICV	12/09/13 17:05	WI131021-1	1.003		1.01	mg/L	100.7	90	110			
WG356136ICB	ICB	12/09/13 17:08				U	mg/L		-0.15	0.15			
WG356136LFB1	LFB	12/09/13 17:09	WI121218-3	1		.988	mg/L	98.8	90	110			
L15767-01AS	AS	12/09/13 17:26	WI121218-3	1	U	1.028	mg/L	102.8	90	110			
L15767-02DUP	DUP	12/09/13 17:28			U	U	mg/L				0	20	RA
WG356136LFB2	LFB	12/09/13 17:40	WI121218-3	1		1.018	mg/L	101.8	90	110			
L15770-03DUP	DUP	12/09/13 17:45			.09	.093	mg/L				3.3	20	RA
L15770-02AS	AS	12/09/13 18:01	WI121218-3	1	U	1.069	mg/L	106.9	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW3	LCSW	12/04/13 16:07	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG355870LCSW6	LCSW	12/04/13 21:07	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15772-02DUP	DUP	12/04/13 22:46			8.2	8.23	units				0.4	20	
WG355870LCSW9	LCSW	12/05/13 0:30	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW12	LCSW	12/05/13 3:35	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW15	LCSW	12/05/13 6:43	PCN41777	6		6.05	units	100.8	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356142													
WG356142ICV	ICV	12/09/13 17:06	WI131104-3	.65228		.686	mg/L	105.2	90	110			
WG356142ICB	ICB	12/09/13 17:09				U	mg/L		-0.03	0.03			
WG356097LRB	LRB	12/09/13 17:10				U	mg/L		-0.03	0.03			
WG356097LFB	LFB	12/09/13 17:11	WI131206-2	.5		.497	mg/L	99.4	90	110			
L15770-01LFM	LFM	12/09/13 17:29	WI131206-2	.5	.02	.509	mg/L	97.8	90	110			
L15770-02DUP	DUP	12/09/13 17:32			.02	.021	mg/L				4.9	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	20		19.77	mg/L	98.9	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.9	0.9			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	99.94539		101.1	mg/L	101.2	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	199.89078	18.3	222	mg/L	101.9	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	199.89078	18.3	220.2	mg/L	101	85	115	0.81	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	20		19.69	mg/L	98.5	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.9	0.9			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.66	0.66			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	99.94539		97.27	mg/L	97.3	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	99.94539	4	101.7	mg/L	97.8	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	99.94539	4	100.3	mg/L	96.4	70	130	1.39	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	99.94539	1.2	98.75	mg/L	97.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	99.94539	1.2	98.72	mg/L	97.6	70	130	0.03	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355603													
WG355603PBW	PBW	11/27/13 12:10				U	mg/L		-20	20			
WG355603LCSW	LCSW	11/27/13 12:11	PCN44256	260		250	mg/L	96.2	80	120			
L15772-02DUP	DUP	11/27/13 12:39			400	410	mg/L				2.5	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355609													
WG355609PBW	PBW	11/27/13 14:10				U	mg/L		-15	15			
WG355609LCSW	LCSW	11/27/13 14:11	PCN44256	160		147	mg/L	91.9	80	120			
L15772-02DUP	DUP	11/27/13 14:34			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2	mg/L	100	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.3	0.3			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	1.0009		1.06	mg/L	105.9	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	2.0018	U	2.15	mg/L	107.4	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	2.0018	U	2.14	mg/L	106.9	85	115	0.47	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		2	mg/L	100	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.3	0.3			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.22	0.22			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	1.0009		1.04	mg/L	103.9	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	1.0009	U	1.03	mg/L	102.9	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	1.0009	U	1.02	mg/L	101.9	70	130	0.98	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.05059	mg/L	101.2	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05162	mg/L	103.1	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	.0002	.05648	mg/L	112.4	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	.0002	.05652	mg/L	112.5	70	130	0.07	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05294	mg/L	105.9	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04844	mg/L	96.8	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.0016	.05132	mg/L	99.3	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.0016	.05424	mg/L	105.2	70	130	5.53	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.02002		.02031	mg/L	101.4	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.00015	0.00015			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.01001		.009017	mg/L	90.1	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.01001	U	.007646	mg/L	76.4	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.01001	U	.007898	mg/L	78.9	70	130	3.24	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.02002		.02175	mg/L	108.6	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.00015	0.00015			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00011	0.00011			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.01001		.008538	mg/L	85.3	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.01001	U	.008	mg/L	79.9	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.01001	U	.00803	mg/L	80.2	70	130	0.37	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	100		99.52	mg/L	99.5	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.9	0.9			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	100.0204		100.7	mg/L	100.7	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	200.0408	327	512.8	mg/L	92.9	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	200.0408	327	507.6	mg/L	90.3	85	115	1.02	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	100		99.62	mg/L	99.6	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.9	0.9			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.66	0.66			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	100.0204		97.74	mg/L	97.7	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	100.0204	2.3	99.81	mg/L	97.5	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	100.0204	2.3	98.57	mg/L	96.3	70	130	1.25	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	100.0204	181	278.8	mg/L	97.8	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	100.0204	181	280.5	mg/L	99.5	70	130	0.61	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		2.02	mg/L	101	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.03	0.03			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	.5		.508	mg/L	101.6	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	1	.55	1.56	mg/L	101	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	1	.55	1.548	mg/L	99.8	85	115	0.77	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.982	mg/L	99.1	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.03	0.03			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.022	0.022			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	.5		.476	mg/L	95.2	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	.5	.13	.613	mg/L	96.6	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	.5	.13	.604	mg/L	94.8	70	130	1.48	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	.5	.06	.538	mg/L	95.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	.5	.06	.542	mg/L	96.4	70	130	0.74	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30	mg/L	100	90	110			
L15750-03DUP	DUP	12/09/13 21:02			1300	1300	mg/L				0	20	
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	81.4	142	mg/L	101	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L15770***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.05194	mg/L	103.9	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.05297	mg/L	105.8	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	U	.05339	mg/L	106.7	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	U	.05449	mg/L	108.9	70	130	2.04	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05263	mg/L	105.3	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.04914	mg/L	98.2	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.0006	.0511	mg/L	100.9	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.0006	.05178	mg/L	102.3	70	130	1.32	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05015		.05082	mg/L	101.3	90	110			
WG355906ICB	ICB	12/05/13 20:28				.00013	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05005		.0501	mg/L	100.1	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05005	U	.04771	mg/L	95.3	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05005	U	.0502	mg/L	100.3	70	130	5.09	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05015		.05124	mg/L	102.2	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05005		.046	mg/L	91.9	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05005	.0024	.03548	mg/L	66.1	70	130			M2
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05005	.0024	.03438	mg/L	63.9	70	130	3.15	20	M2

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		1.9765	mg/L	98.8	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.015	0.015			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	.999		1.021	mg/L	102.2	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	1.998	U	2.046	mg/L	102.4	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	1.998	U	2.036	mg/L	101.9	85	115	0.49	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.9382	mg/L	96.9	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.015	0.015			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.011	0.011			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	.999		.988	mg/L	98.9	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	.999	U	.9852	mg/L	98.6	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	.999	U	.9736	mg/L	97.5	70	130	1.18	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	.999	.026	1.031	mg/L	100.6	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	.999	.026	1.014	mg/L	98.9	70	130	1.66	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.05095	mg/L	101.9	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0003	0.0003			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.05		.05298	mg/L	106	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.05	.0007	.05205	mg/L	102.7	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.05	.0007	.05339	mg/L	105.4	70	130	2.54	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.05195	mg/L	103.9	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0003	0.0003			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00022	0.00022			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.05		.04842	mg/L	96.8	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.05	.0093	.06028	mg/L	102	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.05	.0093	.06058	mg/L	102.6	70	130	0.5	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355906													
WG355906ICV	ICV	12/05/13 20:25	MS131202-2	.05		.04904	mg/L	98.1	90	110			
WG355906ICB	ICB	12/05/13 20:28				U	mg/L		-0.0006	0.0006			
WG355906LFB	LFB	12/05/13 20:31	MS131118-2	.0501		.05277	mg/L	105.3	85	115			
L15750-01AS	AS	12/05/13 20:57	MS131118-2	.0501	.001	.05251	mg/L	102.8	70	130			
L15750-01ASD	ASD	12/05/13 21:07	MS131118-2	.0501	.001	.05382	mg/L	105.4	70	130	2.46	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356215													
WG356215ICV	ICV	12/10/13 23:32	MS131202-2	.05		.0497	mg/L	99.4	90	110			
WG356215ICB	ICB	12/10/13 23:35				U	mg/L		-0.0006	0.0006			
WG356088LRB	LRB	12/10/13 23:38				U	mg/L		-0.00044	0.00044			
WG356088LFB	LFB	12/10/13 23:42	MS131118-2	.0501		.04901	mg/L	97.8	85	115			
L15750-02LFM	LFM	12/10/13 23:55	MS131118-2	.0501	.0249	.07206	mg/L	94.1	70	130			
L15750-02LFMD	LFMD	12/10/13 23:59	MS131118-2	.0501	.0249	.0727	mg/L	95.4	70	130	0.88	20	

SPF Water Engineering

ACZ Project ID: ***L15770***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355837													
WG355837ICV	ICV	12/04/13 14:47	II131113-1	2		1.931	mg/L	96.6	95	105			
WG355837ICB	ICB	12/04/13 14:53				U	mg/L		-0.03	0.03			
WG355837LFB	LFB	12/04/13 15:06	II131119-3	.5		.503	mg/L	100.6	85	115			
L15731-02AS	AS	12/04/13 15:16	II131119-3	1	U	1.029	mg/L	102.9	85	115			
L15731-02ASD	ASD	12/04/13 15:19	II131119-3	1	U	1.02	mg/L	102	85	115	0.88	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356021													
WG356021ICV	ICV	12/06/13 14:57	II131111-1	2		1.921	mg/L	96.1	95	105			
WG356021ICB	ICB	12/06/13 15:03				U	mg/L		-0.03	0.03			
WG355971LRB	LRB	12/06/13 15:16				U	mg/L		-0.022	0.022			
WG355971LFB	LFB	12/06/13 15:19	II131119-3	.5		.489	mg/L	97.8	85	115			
L15750-01LFM	LFM	12/06/13 15:25	II131119-3	.5	.46	.935	mg/L	95	70	130			
L15750-01LFMD	LFMD	12/06/13 15:28	II131119-3	.5	.46	.919	mg/L	91.8	70	130	1.73	20	
L15770-03LFM	LFM	12/06/13 16:13	II131119-3	.5	.02	.505	mg/L	99	70	130			
L15770-03LFMD	LFMD	12/06/13 16:16	II131119-3	.5	.02	.506	mg/L	99.2	70	130	0.2	20	

SPF Water Engineering ACZ Project ID: ***L15770***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15770-01	WG356215	Cobalt, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355906	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356277	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356215	Nickel, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356073	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356136	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356142	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L15770***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15770-02	WG356021	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356215	Cobalt, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356021	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355906	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356277	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355755	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG356215	Nickel, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356073	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356136	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356142	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L15770***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15770-03	WG356021	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356215	Cobalt, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356021	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355906	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356215	Manganese, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Nickel, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356073	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356136	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356142	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15770
Date Received: 11/27/2013 10:23
Received By: mtb
Date Printed: 11/27/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3050	5.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L15770

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2014-GW								
GW-4	11/21/13 12:10	GW	8	X								
GW-4-DUP	11/21/13 12:25	GW	8	X								
PW-4	11/21/2013 10:55	GW	8	X								

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	11-21-13 20:00		
		WRC 11-22-13 10:23	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15770 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 17, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15771

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 27, 2013. This project has been assigned to ACZ's project number, L15771. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15771. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 16, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

December 17, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15771

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on November 27, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15771. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The dissolved Cobalt values exceed the corresponding total values for project L15571. The samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-1

ACZ Sample ID: ***L15771-01***
Date Sampled: *11/21/13 15:35*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:16	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:48	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 14:36	bsu
Total Hot Plate Digestion	M200.2 ICP								12/03/13 11:39	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:57	scp

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-1

ACZ Sample ID: ***L15771-01***
Date Sampled: *11/21/13 15:35*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/02/13 19:49	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 20:43	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	12/05/13 4:40	msh
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	12/06/13 6:00	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0317			mg/L	0.0002	0.001	12/05/13 4:40	msh
Arsenic, total	M200.8 ICP-MS	1	0.0313			mg/L	0.0002	0.001	12/06/13 6:00	pmc
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	12/02/13 19:49	jjc
Barium, total	M200.7 ICP	1	0.033			mg/L	0.003	0.02	12/03/13 20:43	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 4:40	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 6:00	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/02/13 19:49	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 20:43	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	12/03/13 14:02	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	12/03/13 20:43	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:40	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:00	pmc
Calcium, dissolved	M200.7 ICP	1	44.7			mg/L	0.2	1	12/02/13 19:49	jjc
Calcium, total	M200.7 ICP	1	45.8			mg/L	0.2	1	12/03/13 20:43	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	12/05/13 4:40	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	12/06/13 6:00	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00034			mg/L	0.00005	0.0003	12/11/13 5:35	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	12/13/13 21:32	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 4:40	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 6:00	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:49	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:43	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/02/13 19:49	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 20:43	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:40	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:00	pmc
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/02/13 19:49	jjc
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	12/03/13 20:43	aeb
Magnesium, dissolved	M200.7 ICP	1	8.6			mg/L	0.2	1	12/02/13 19:49	jjc
Magnesium, total	M200.7 ICP	1	8.6			mg/L	0.2	1	12/03/13 20:43	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/11/13 5:35	pmc
Manganese, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	12/06/13 6:00	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	12/06/13 10:58	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	12/03/13 14:22	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	12/05/13 4:40	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.003	12/06/13 6:00	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 4:40	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/06/13 6:00	pmc
Potassium, dissolved	M200.7 ICP	1	6.1			mg/L	0.3	2	12/02/13 19:49	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-1

ACZ Sample ID: ***L15771-01***
Date Sampled: *11/21/13 15:35*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.2			mg/L	0.3	2	12/03/13 20:43	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:49	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:43	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0003	12/05/13 4:40	msh
Selenium, total	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0003	12/06/13 6:00	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 18:06	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 19:31	pmc
Sodium, dissolved	M200.7 ICP	1	26.4			mg/L	0.3	2	12/02/13 19:49	jjc
Sodium, total	M200.7 ICP	1	26.9			mg/L	0.3	2	12/03/13 20:43	aeb
Strontium, dissolved	M200.7 ICP	1	0.21		*	mg/L	0.01	0.05	12/02/13 19:49	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	12/03/13 20:43	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:40	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:00	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 4:40	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/06/13 6:00	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/02/13 19:49	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 20:43	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0001	0.0005	12/05/13 4:40	msh
Uranium, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	12/06/13 6:00	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0180			mg/L	0.0002	0.001	12/05/13 4:40	msh
Vanadium, total	M200.8 ICP-MS	1	0.0192			mg/L	0.0002	0.001	12/06/13 6:00	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/02/13 19:49	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 20:43	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GW-1

ACZ Sample ID: ***L15771-01***
Date Sampled: *11/21/13 15:35*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	146			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	146			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	11.7		*	mg/L	0.5	2.5	12/09/13 23:25	tcd
Conductivity @25C	SM2510B	1	411			umhos/cm	1	10	12/04/13 22:02	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:04	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:24	bsu
Fluoride	M300.0 - Ion Chromatography	1	0.46	B	*	mg/L	0.1	0.5	12/09/13 23:25	tcd
Hardness as CaCO3	SM2340B - Calculation		147			mg/L	1	7	12/17/13 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.31		*	mg/L	0.02	0.1	12/06/13 23:33	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:44	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	12/07/13 12:38	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	11/27/13 13:51	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/27/13 14:29	mss3
Sulfate	M300.0 - Ion Chromatography	1	34.2			mg/L	0.5	2.5	12/09/13 23:25	tcd

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-1

ACZ Sample ID: ***L15771-02***
Date Sampled: *11/21/13 14:50*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:26	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:52	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 14:46	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 10:12	scp
Total Hot Plate Digestion	M200.2 ICP								12/03/13 11:51	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-1

ACZ Sample ID: ***L15771-02***
Date Sampled: *11/21/13 14:50*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/02/13 19:52	jjc
Aluminum, total	M200.7 ICP	1	0.08	B		mg/L	0.03	0.2	12/03/13 20:46	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 4:44	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 6:03	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0315			mg/L	0.0002	0.001	12/05/13 4:44	msh
Arsenic, total	M200.8 ICP-MS	1	0.0310			mg/L	0.0002	0.001	12/06/13 6:03	pmc
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	12/02/13 19:52	jjc
Barium, total	M200.7 ICP	1	0.033			mg/L	0.003	0.02	12/03/13 20:46	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 4:44	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 6:03	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/02/13 19:52	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 20:46	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	12/03/13 14:05	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/03/13 20:46	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:44	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:03	pmc
Calcium, dissolved	M200.7 ICP	1	29.7			mg/L	0.2	1	12/02/13 19:52	jjc
Calcium, total	M200.7 ICP	1	30			mg/L	0.2	1	12/03/13 20:46	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	12/05/13 4:44	msh
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/06/13 6:03	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	12/11/13 5:38	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	12/13/13 21:33	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 4:44	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 6:03	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:52	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:46	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.02	0.05	12/02/13 19:52	jjc
Iron, total	M200.7 ICP	1	0.32			mg/L	0.02	0.05	12/03/13 20:46	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:44	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:03	pmc
Lithium, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.02	0.1	12/02/13 19:52	jjc
Lithium, total	M200.7 ICP	1	0.07	B		mg/L	0.02	0.1	12/03/13 20:46	aeb
Magnesium, dissolved	M200.7 ICP	1	3.4			mg/L	0.2	1	12/02/13 19:52	jjc
Magnesium, total	M200.7 ICP	1	3.5			mg/L	0.2	1	12/03/13 20:46	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0059			mg/L	0.0005	0.003	12/05/13 4:44	msh
Manganese, total	M200.8 ICP-MS	1	0.0136			mg/L	0.0005	0.003	12/06/13 6:03	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:03	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 14:27	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0005	0.003	12/05/13 4:44	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0005	0.003	12/06/13 6:03	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 4:44	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/06/13 6:03	pmc
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.3	2	12/02/13 19:52	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-1

ACZ Sample ID: ***L15771-02***
Date Sampled: *11/21/13 14:50*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.3	2	12/03/13 20:46	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:52	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:46	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0003	12/05/13 4:44	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	12/06/13 6:03	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 18:16	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 19:33	pmc
Sodium, dissolved	M200.7 ICP	1	39.1			mg/L	0.3	2	12/02/13 19:52	jjc
Sodium, total	M200.7 ICP	1	39.3			mg/L	0.3	2	12/03/13 20:46	aeb
Strontium, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	12/02/13 19:52	jjc
Strontium, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/03/13 20:46	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:44	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:03	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 4:44	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	12/06/13 6:03	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/02/13 19:52	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 20:46	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	12/05/13 4:44	msh
Uranium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	12/06/13 6:03	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0102			mg/L	0.0002	0.001	12/05/13 4:44	msh
Vanadium, total	M200.8 ICP-MS	1	0.0109			mg/L	0.0002	0.001	12/06/13 6:03	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/02/13 19:52	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 20:46	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PW-1

ACZ Sample ID: ***L15771-02***
Date Sampled: *11/21/13 14:50*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	128			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1	3	B		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	131			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	8.13		*	mg/L	0.5	2.5	12/09/13 23:43	tcd
Conductivity @25C	SM2510B	1	349			umhos/cm	1	10	12/04/13 22:11	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:05	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:25	bsu
Fluoride	M300.0 - Ion Chromatography	1	0.42	B	*	mg/L	0.1	0.5	12/09/13 23:43	tcd
Hardness as CaCO3	SM2340B - Calculation		88			mg/L	1	7	12/17/13 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.65		*	mg/L	0.02	0.1	12/06/13 23:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:45	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	12/07/13 12:39	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270			mg/L	10	20	11/27/13 13:52	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/27/13 14:30	mss3
Sulfate	M300.0 - Ion Chromatography	1	31.1			mg/L	0.5	2.5	12/09/13 23:43	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59761

ACZ Sample ID: ***L15771-03***
Date Sampled: *11/21/13 16:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:36	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 14:57	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 14:57	bsu
Total Hot Plate Digestion	M200.2 ICP								12/03/13 12:02	aeb
Total Hot Plate Digestion	M200.2 ICP-MS				*				12/16/13 10:26	scp

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59761

ACZ Sample ID: ***L15771-03***
Date Sampled: *11/21/13 16:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/02/13 19:55	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 20:49	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 4:54	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 6:06	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0240			mg/L	0.0002	0.001	12/05/13 4:54	msh
Arsenic, total	M200.8 ICP-MS	1	0.0244			mg/L	0.0002	0.001	12/06/13 6:06	pmc
Barium, dissolved	M200.7 ICP	1	0.045			mg/L	0.003	0.02	12/02/13 19:55	jjc
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	12/03/13 20:49	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 4:54	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 6:06	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/02/13 19:55	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 20:49	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	12/03/13 14:08	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	12/03/13 20:49	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:54	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:06	pmc
Calcium, dissolved	M200.7 ICP	1	42.2			mg/L	0.2	1	12/02/13 19:55	jjc
Calcium, total	M200.7 ICP	1	42.6			mg/L	0.2	1	12/03/13 20:49	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	12/05/13 4:54	msh
Chromium, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.002	12/06/13 6:06	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	12/11/13 5:41	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/13/13 21:35	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 4:54	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 6:06	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:55	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:49	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/02/13 19:55	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 20:49	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:54	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:06	pmc
Lithium, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.02	0.1	12/02/13 19:55	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/03/13 20:49	aeb
Magnesium, dissolved	M200.7 ICP	1	10.2			mg/L	0.2	1	12/02/13 19:55	jjc
Magnesium, total	M200.7 ICP	1	10.3			mg/L	0.2	1	12/03/13 20:49	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/11/13 5:41	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 6:06	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:08	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	12/03/13 14:32	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0025	B		mg/L	0.0005	0.003	12/05/13 4:54	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	12/06/13 6:06	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 4:54	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/06/13 6:06	pmc
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.3	2	12/02/13 19:55	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59761

ACZ Sample ID: ***L15771-03***
Date Sampled: *11/21/13 16:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.3	2	12/03/13 20:49	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/02/13 19:55	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:49	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	12/05/13 4:54	msh
Selenium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	12/06/13 6:06	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 18:20	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 19:35	pmc
Sodium, dissolved	M200.7 ICP	1	24.3			mg/L	0.3	2	12/02/13 19:55	jjc
Sodium, total	M200.7 ICP	1	24.1			mg/L	0.3	2	12/03/13 20:49	aeb
Strontium, dissolved	M200.7 ICP	1	0.23		*	mg/L	0.01	0.05	12/02/13 19:55	jjc
Strontium, total	M200.7 ICP	1	0.23			mg/L	0.01	0.05	12/03/13 20:49	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 4:54	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 6:06	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 4:54	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	12/06/13 6:06	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/02/13 19:55	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 20:49	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	12/05/13 4:54	msh
Uranium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	12/06/13 6:06	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0197			mg/L	0.0002	0.001	12/05/13 4:54	msh
Vanadium, total	M200.8 ICP-MS	1	0.0215			mg/L	0.0002	0.001	12/06/13 6:06	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/02/13 19:55	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 20:49	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59761

ACZ Sample ID: ***L15771-03***
Date Sampled: *11/21/13 16:25*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	163			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	163			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	13.4		*	mg/L	0.5	2.5	12/10/13 0:01	tcd
Conductivity @25C	SM2510B	1	399			umhos/cm	1	10	12/04/13 22:20	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:07	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:26	bsu
Fluoride	M300.0 - Ion Chromatography	1	0.51		*	mg/L	0.1	0.5	12/10/13 0:01	tcd
Hardness as CaCO3	SM2340B - Calculation		147			mg/L	1	7	12/17/13 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.79		*	mg/L	0.02	0.1	12/06/13 23:37	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:46	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	12/07/13 12:40	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290			mg/L	10	20	11/27/13 13:53	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/27/13 14:31	mss3
Sulfate	M300.0 - Ion Chromatography	1	27.4			mg/L	0.5	2.5	12/10/13 0:01	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15771***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870PBW1	PBW	12/04/13 15:50				U	mg/L		-20	20			
WG355870LCSW2	LCSW	12/04/13 16:04	WC131126-	820.0001		743	mg/L	90.6	90	110			
WG355870LCSW5	LCSW	12/04/13 21:04	WC131126-	820.0001		772.2	mg/L	94.2	90	110			
WG355870PBW2	PBW	12/04/13 21:12				U	mg/L		-20	20			
L15772-02DUP	DUP	12/04/13 22:46			165	165.1	mg/L				0.1	20	
WG355870LCSW8	LCSW	12/05/13 0:26	WC131126-	820.0001		764.8	mg/L	93.3	90	110			
WG355870PBW3	PBW	12/05/13 0:35				2.1	mg/L		-20	20			
WG355870LCSW11	LCSW	12/05/13 3:32	WC131126-	820.0001		773.9	mg/L	94.4	90	110			
WG355870PBW4	PBW	12/05/13 3:40				2.2	mg/L		-20	20			
WG355870LCSW14	LCSW	12/05/13 6:40	WC131126-	820.0001		777.4	mg/L	94.8	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.972	mg/L	98.6	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.09	0.09			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1.0011		1.048	mg/L	104.7	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1.0011	2.28	3.268	mg/L	98.7	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1.0011	2.28	3.259	mg/L	97.8	85	115	0.28	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.98	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.09	0.09			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.066	0.066			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0011		1.018	mg/L	101.7	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0011	U	1.038	mg/L	103.7	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0011	U	1.035	mg/L	103.4	70	130	0.29	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.02		.02091	mg/L	104.6	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0012	0.0012			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.01		.01038	mg/L	103.8	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.01	U	.01063	mg/L	106.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.01	U	.01078	mg/L	107.8	70	130	1.4	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.02		.02021	mg/L	101.1	90	110			
WG355990ICB	ICB	12/06/13 4:36				.00042	mg/L		-0.0012	0.0012			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00088	0.00088			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.01		.01106	mg/L	110.6	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.01	U	.0113	mg/L	113	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.01	U	.01112	mg/L	111.2	70	130	1.61	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05239	mg/L	104.8	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0006	0.0006			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04954	mg/L	99	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0315	.08596	mg/L	108.8	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0315	.08691	mg/L	110.7	70	130	1.1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.05337	mg/L	106.7	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0006	0.0006			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00044	0.00044			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.05182	mg/L	103.5	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	.0019	.05623	mg/L	108.6	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	.0019	.05403	mg/L	104.2	70	130	3.99	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.9678	mg/L	98.4	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.009	0.009			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	.5		.5015	mg/L	100.3	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	.5	.02	.5123	mg/L	98.5	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	.5	.02	.5162	mg/L	99.2	85	115	0.76	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.9805	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				.0041	mg/L		-0.009	0.009			
WG355724LRB	LRB	12/03/13 19:52				.0032	mg/L		-0.0066	0.0066			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.4768	mg/L	95.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	.047	.527	mg/L	96	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	.047	.528	mg/L	96.2	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04872	mg/L	97.4	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.00015	0.00015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.04558	mg/L	91	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	U	.05035	mg/L	100.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	U	.05038	mg/L	100.6	70	130	0.06	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.0467	mg/L	93.4	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.00015	0.00015			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00011	0.00011			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.0501		.0479	mg/L	95.6	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.0501	U	.04586	mg/L	91.5	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.0501	U	.0459	mg/L	91.6	70	130	0.09	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.975	mg/L	98.8	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.12	0.12			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1		1.044	mg/L	104.4	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1	U	1.065	mg/L	106.5	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1	U	1.035	mg/L	103.5	85	115	2.86	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.009	mg/L	100.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.12	0.12			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.088	0.088			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1		1.056	mg/L	105.6	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1	U	1.049	mg/L	104.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1	U	1.025	mg/L	102.5	70	130	2.31	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355754													
WG355754ICV	ICV	12/03/13 12:26	II131113-1	2		2.025	mg/L	101.3	95	105			
WG355754ICB	ICB	12/03/13 12:32				U	mg/L		-0.03	0.03			
WG355754LFB	LFB	12/03/13 12:44	II131119-3	.5005		.521	mg/L	104.1	85	115			
L15750-03AS	AS	12/03/13 13:49	II131119-3	2.5025	U	2.407	mg/L	96.2	85	115			
L15750-03ASD	ASD	12/03/13 13:59	II131119-3	2.5025	U	2.396	mg/L	95.7	85	115	0.46	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.012	mg/L	100.6	95	105			
WG355798ICB	ICB	12/03/13 19:39				.013	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				.011	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5005		.486	mg/L	97.1	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5005	.08	.547	mg/L	93.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5005	.08	.557	mg/L	95.3	70	130	1.81	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04989	mg/L	99.8	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.04941	mg/L	98.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	U	.0488	mg/L	97.4	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	U	.04951	mg/L	98.8	70	130	1.44	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.04873	mg/L	97.5	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.0501		.04962	mg/L	99	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.0501	U	.04925	mg/L	98.3	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.0501	U	.04864	mg/L	97.1	70	130	1.25	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	100		98.92	mg/L	98.9	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.6	0.6			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	68.00225		70.54	mg/L	103.7	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	68.00225	222	280.3	mg/L	85.7	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	68.00225	222	280.9	mg/L	86.6	85	115	0.21	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		99.33	mg/L	99.3	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.6	0.6			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.44	0.44			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	68.00225		67.6	mg/L	99.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	68.00225	42.6	111.1	mg/L	100.7	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	68.00225	42.6	111.9	mg/L	101.9	70	130	0.72	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30.3	mg/L	101	90	110			
L15750-03DUP	DUP	12/09/13 21:02			U	U	mg/L				0	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	39	99.7	mg/L	101.2	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04867	mg/L	97.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04784	mg/L	95.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0007	.04774	mg/L	94	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0007	.04897	mg/L	96.4	70	130	2.54	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.04994	mg/L	99.9	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0015	0.0015			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.0011	0.0011			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.05029	mg/L	100.5	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	U	.04861	mg/L	97.1	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	U	.04742	mg/L	94.7	70	130	2.48	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356226													
WG356226ICV	ICV	12/11/13 4:53	MS131202-2	.05		.04963	mg/L	99.3	90	110			
WG356226ICB	ICB	12/11/13 4:56				U	mg/L		-0.00015	0.00015			
WG356226LFB	LFB	12/11/13 5:00	MS131118-2	.05005		.05167	mg/L	103.2	85	115			
L15734-01AS	AS	12/11/13 5:19	MS131118-2	.05005	.00049	.05178	mg/L	102.5	70	130			
L15734-01ASD	ASD	12/11/13 5:22	MS131118-2	.05005	.00049	.0523	mg/L	103.5	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356436													
WG356436ICV	ICV	12/13/13 21:19	MS131202-2	.05		.04942	mg/L	98.8	90	110			
WG356436ICB	ICB	12/13/13 21:21				U	mg/L		-0.00015	0.00015			
WG355846LRB	LRB	12/13/13 21:23				U	mg/L		-0.00011	0.00011			
WG355846LFB	LFB	12/13/13 21:24	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
L15716-05LFM	LFM	12/13/13 21:28	MS131118-2	.05005	.0006	.05012	mg/L	98.9	70	130			
L15716-05LFMD	LFMD	12/13/13 21:30	MS131118-2	.05005	.0006	.04848	mg/L	95.7	70	130	3.33	20	
WG355922LRB	LRB	12/13/13 21:37				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/13/13 21:43	MS131118-2	.05005		.05096	mg/L	101.8	85	115			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW1	LCSW	12/04/13 15:52	PCN42442	1408.8		1421.2	umhos/cm	100.9	90	110			
WG355870LCSW4	LCSW	12/04/13 20:52	PCN42442	1408.8		1404.8	umhos/cm	99.7	90	110			
L15772-02DUP	DUP	12/04/13 22:46			575	578	umhos/cm				0.5	20	
WG355870LCSW7	LCSW	12/05/13 0:12	PCN42442	1408.8		1392.6	umhos/cm	98.9	90	110			
WG355870LCSW10	LCSW	12/05/13 3:20	PCN42442	1408.8		1382.3	umhos/cm	98.1	90	110			
WG355870LCSW13	LCSW	12/05/13 6:28	PCN42442	1408.8		1375.2	umhos/cm	97.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04935	mg/L	98.7	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04762	mg/L	95.1	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.04785	mg/L	95.6	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.0488	mg/L	97.5	70	130	1.97	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.04981	mg/L	99.6	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0015	0.0015			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.0011	0.0011			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.05026	mg/L	100.4	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	.0017	.04624	mg/L	89	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	.0017	.04527	mg/L	87.1	70	130	2.12	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355900													
WG355836LRB	LRB	12/04/13 18:57				U	mg/L		-0.003	0.003			
WG355836LFB	LFB	12/04/13 18:58	WI131202-2	.2		.1849	mg/L	92.5	90	110			
L15768-01DUP	DUP	12/04/13 19:00			U	U	mg/L				0	20	RA
L15770-01LFM	LFM	12/04/13 19:01	WI131202-2	.2	U	.1813	mg/L	90.7	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355780LRB	LRB	12/04/13 17:14				U	mg/L		-0.003	0.003			
WG355780LFB	LFB	12/04/13 17:15	WI131202-4	.2		.1964	mg/L	98.2	90	110			
L15728-01DUP	DUP	12/04/13 17:16			U	U	mg/L				0	20	RA
L15728-02LFM	LFM	12/04/13 17:18	WI131202-4	.2	U	.1877	mg/L	93.9	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	1.5		1.52	mg/L	101.3	90	110			
L15750-03DUP	DUP	12/09/13 21:02			13.5	13.6	mg/L				0.7	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	3	.54	3.74	mg/L	106.7	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	1.5		1.53	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.97	mg/L	98.5	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.3	0.3			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1.001		1.06	mg/L	105.9	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1.001	U	.95	mg/L	94.9	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1.001	U	.98	mg/L	97.9	85	115	3.11	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.01	mg/L	100.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.3	0.3			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.22	0.22			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.001		1.01	mg/L	100.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.001	U	1.02	mg/L	101.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.001	U	1.01	mg/L	100.9	70	130	0.99	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.989	mg/L	99.5	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.06	0.06			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1.0014		1.012	mg/L	101.1	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1.0014	41.1	39.65	mg/L	-134.8	85	115			M3
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1.0014	41.1	39.83	mg/L	-116.8	85	115	0.45	20	M3

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.995	mg/L	99.8	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.06	0.06			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.044	0.044			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0014		.975	mg/L	97.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0014	U	.982	mg/L	98.1	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0014	U	.988	mg/L	98.7	70	130	0.61	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05332	mg/L	106.6	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05157	mg/L	103	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.05053	mg/L	101	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.05177	mg/L	103.4	70	130	2.42	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.04982	mg/L	99.6	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.04939	mg/L	98.7	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	U	.05138	mg/L	102.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	U	.05029	mg/L	100.5	70	130	2.14	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.938	mg/L	96.9	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.06	0.06			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1		.976	mg/L	97.6	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1	.03	1.015	mg/L	98.5	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1	.03	1.021	mg/L	99.1	85	115	0.59	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.94	mg/L	97	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.06	0.06			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.044	0.044			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1		.953	mg/L	95.3	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1	.04	.998	mg/L	95.8	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1	.04	.993	mg/L	95.3	70	130	0.5	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	100		97.27	mg/L	97.3	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.6	0.6			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	49.99695		49.63	mg/L	99.3	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	49.99695	56.2	103.5	mg/L	94.6	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	49.99695	56.2	103.4	mg/L	94.4	85	115	0.1	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		97.65	mg/L	97.7	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.6	0.6			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.44	0.44			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	49.99695		47.45	mg/L	94.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	49.99695	10.3	58.11	mg/L	95.6	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	49.99695	10.3	58.29	mg/L	96	70	130	0.31	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05309	mg/L	106.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05325	mg/L	106.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0059	.05596	mg/L	100	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0059	.05251	mg/L	93.1	70	130	6.36	20	
WG356226													
WG356226ICV	ICV	12/11/13 4:53	MS131202-2	.05		.05123	mg/L	102.5	90	110			
WG356226ICB	ICB	12/11/13 4:56				U	mg/L		-0.0015	0.0015			
WG356226LFB	LFB	12/11/13 5:00	MS131118-2	.05005		.05133	mg/L	102.6	85	115			
L15734-01AS	AS	12/11/13 5:19	MS131118-2	.05005	.0066	.05821	mg/L	103.1	70	130			
L15734-01ASD	ASD	12/11/13 5:22	MS131118-2	.05005	.0066	.05887	mg/L	104.4	70	130	1.13	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.05165	mg/L	103.3	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0015	0.0015			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.0011	0.0011			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.05105	mg/L	102	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	.5272	.5834	mg/L	112.3	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	.5272	.5786	mg/L	102.7	70	130	0.83	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15770-03MS	MS	12/06/13 10:48	HG131206-6	2	U	2.02	ng/L	101	71	125			
L15770-03MSD	MSD	12/06/13 10:53	HG131206-6	2	U	2.06	ng/L	103	71	125	1.96	24	
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L15771***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
L15721-01MS	MS	12/03/13 13:36	HG131010-5	2	1.9	3.57	ng/L	83.5	71	125			
L15721-01MSD	MSD	12/03/13 13:42	HG131010-5	2	1.9	3.73	ng/L	91.5	71	125	4.38	24	
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.02006		.0193	mg/L	96.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05		.04778	mg/L	95.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05	.0044	.05164	mg/L	94.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05	.0044	.05232	mg/L	95.8	70	130	1.31	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.02006		.01929	mg/L	96.2	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0015	0.0015			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.0011	0.0011			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05		.04973	mg/L	99.5	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05	.0029	.05585	mg/L	105.9	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05	.0029	.05505	mg/L	104.3	70	130	1.44	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04956	mg/L	99.1	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0018	0.0018			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04775	mg/L	95.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.0471	mg/L	94.1	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.04826	mg/L	96.4	70	130	2.43	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.04951	mg/L	99	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0018	0.0018			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00132	0.00132			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.04943	mg/L	98.8	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	.0011	.04548	mg/L	88.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	.0011	.04478	mg/L	87.3	70	130	1.55	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356065													
WG356065ICV	ICV	12/06/13 19:12	WI131015-1	2.416		2.407	mg/L	99.6	90	110			
WG356065ICB	ICB	12/06/13 19:14				U	mg/L		-0.06	0.06			
WG356069													
WG356069LFB1	LFB	12/06/13 23:01	WI130816-3	2		2.057	mg/L	102.9	90	110			
L15665-11AS	AS	12/06/13 23:20	WI130816-3	2	.13	2.055	mg/L	96.3	90	110			
L15665-12DUP	DUP	12/06/13 23:23			.06	.061	mg/L				1.7	20	RA
WG356069LFB2	LFB	12/06/13 23:36	WI130816-3	2		2.06	mg/L	103	90	110			
L15771-03AS	AS	12/06/13 23:38	WI130816-3	2	1.79	3.76	mg/L	98.5	90	110			
L15772-01DUP	DUP	12/06/13 23:41			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356035													
WG356035ICV	ICV	12/06/13 13:45	WI131021-1	1.003		1.021	mg/L	101.8	90	110			
WG356035ICB	ICB	12/06/13 13:48				U	mg/L		-0.15	0.15			
WG356046													
WG356046LFB	LFB	12/06/13 15:17	WI121218-3	1		1.016	mg/L	101.6	90	110			
L15745-07AS	AS	12/06/13 15:35	WI121218-3	1	U	1.011	mg/L	101.1	90	110			
L15760-01DUP	DUP	12/06/13 15:37			.16	.147	mg/L				8.5	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW3	LCSW	12/04/13 16:07	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG355870LCSW6	LCSW	12/04/13 21:07	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15772-02DUP	DUP	12/04/13 22:46			8.2	8.23	units				0.4	20	
WG355870LCSW9	LCSW	12/05/13 0:30	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW12	LCSW	12/05/13 3:35	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW15	LCSW	12/05/13 6:43	PCN41777	6		6.05	units	100.8	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L15771***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356080													
WG356080ICV	ICV	12/07/13 12:07	WI131104-3	.65228		.692	mg/L	106.1	90	110			
WG356080ICB	ICB	12/07/13 12:10				U	mg/L		-0.03	0.03			
WG356022LRB	LRB	12/07/13 12:11				U	mg/L		-0.03	0.03			
WG356022LFB	LFB	12/07/13 12:12	WI131206-2	.5		.488	mg/L	97.6	90	110			
L15760-01LFM	LFM	12/07/13 12:55	WI131206-2	.5	1.03	1.54	mg/L	102	90	110			
L15761-01DUP	DUP	12/07/13 12:57			4.7	4.66	mg/L				0.9	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	20		19.51	mg/L	97.6	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.9	0.9			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	99.94539		100.8	mg/L	100.9	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	99.94539	9.9	111.5	mg/L	101.7	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	99.94539	9.9	111.1	mg/L	101.3	85	115	0.36	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	20		19.79	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.9	0.9			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.66	0.66			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	99.94539		96.67	mg/L	96.7	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	99.94539	6	104.2	mg/L	98.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	99.94539	6	104.7	mg/L	98.8	70	130	0.48	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355606													
WG355606PBW	PBW	11/27/13 13:25				U	mg/L		-20	20			
WG355606LCSW	LCSW	11/27/13 13:26	PCN44256	260		254	mg/L	97.7	80	120			
L15771-03DUP	DUP	11/27/13 13:54			290	296	mg/L				2	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355609													
WG355609PBW	PBW	11/27/13 14:10				U	mg/L		-15	15			
WG355609LCSW	LCSW	11/27/13 14:11	PCN44256	160		147	mg/L	91.9	80	120			
L15772-02DUP	DUP	11/27/13 14:34			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L15771***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		2	mg/L	100	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.3	0.3			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	1.0009		1.07	mg/L	106.9	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	1.0009	U	1.04	mg/L	103.9	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	1.0009	U	1.04	mg/L	103.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.02	mg/L	101	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.3	0.3			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.22	0.22			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0009		1.04	mg/L	103.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05234	mg/L	104.7	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04977	mg/L	99.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0046	.05946	mg/L	109.6	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0046	.06057	mg/L	111.8	70	130	1.85	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.05035	mg/L	100.7	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.04958	mg/L	99.1	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	.0001	.05502	mg/L	109.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	.0001	.05445	mg/L	108.6	70	130	1.04	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355931													
WG355931ICV	ICV	12/10/13 16:52	MS131202-2	.02002		.01849	mg/L	92.4	90	110			
WG355931ICB	ICB	12/10/13 16:55				U	mg/L		-0.00015	0.00015			
WG355931LFB	LFB	12/10/13 16:58	MS131118-2	.01001		.008911	mg/L	89	85	115			
L15772-02AS	AS	12/10/13 18:30	MS131118-2	.01001	U	.008195	mg/L	81.9	70	130			
L15772-02ASD	ASD	12/10/13 18:33	MS131118-2	.01001	U	.008368	mg/L	83.6	70	130	2.09	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356063													
WG356063ICV	ICV	12/06/13 18:52	MS131202-2	.02002		.01912	mg/L	95.5	90	110			
WG356063ICB	ICB	12/06/13 18:54				U	mg/L		-0.00015	0.00015			
WG355846LRB	LRB	12/06/13 18:56				U	mg/L		-0.00011	0.00011			
WG355846LFB	LFB	12/06/13 18:58	MS131118-2	.01001		.009162	mg/L	91.5	85	115			
L15716-05LFM	LFM	12/06/13 19:27	MS131118-2	.01001	U	.008685	mg/L	86.8	70	130			
L15716-05LFMD	LFMD	12/06/13 19:29	MS131118-2	.01001	U	.008425	mg/L	84.2	70	130	3.04	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	100		98.75	mg/L	98.8	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.9	0.9			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	100.0204		100.6	mg/L	100.6	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	100.0204	19	120.6	mg/L	101.6	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	100.0204	19	120.3	mg/L	101.3	85	115	0.25	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		99.74	mg/L	99.7	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.9	0.9			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.66	0.66			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	100.0204		97.03	mg/L	97	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	100.0204	24.1	123.4	mg/L	99.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	100.0204	24.1	124.2	mg/L	100.1	70	130	0.65	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.995	mg/L	99.8	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.03	0.03			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	.5		.501	mg/L	100.2	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	.5	1.58	1.997	mg/L	83.4	85	115			M3
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	.5	1.58	1.997	mg/L	83.4	85	115	0	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.999	mg/L	100	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.476	mg/L	95.2	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	.23	.707	mg/L	95.4	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	.23	.711	mg/L	96.2	70	130	0.56	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30	mg/L	100	90	110			
L15750-03DUP	DUP	12/09/13 21:02			1300	1300	mg/L				0	20	
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	81.4	142	mg/L	101	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05259	mg/L	105.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05166	mg/L	103.2	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.05129	mg/L	102.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.0522	mg/L	104.3	70	130	1.76	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.05038	mg/L	100.8	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.04981	mg/L	99.5	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	U	.05328	mg/L	106.5	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	U	.05189	mg/L	103.7	70	130	2.64	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05015		.05079	mg/L	101.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04656	mg/L	93	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.04602	mg/L	91.9	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.04671	mg/L	93.3	70	130	1.49	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05015		.05116	mg/L	102	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				.00011	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05005		.04926	mg/L	98.4	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05005	U	.05089	mg/L	101.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05005	U	.04888	mg/L	97.7	70	130	4.03	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.931	mg/L	96.6	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.015	0.015			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	.999		1.007	mg/L	100.8	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	.999	U	.9813	mg/L	98.2	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	.999	U	.986	mg/L	98.7	85	115	0.48	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.9452	mg/L	97.3	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.015	0.015			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.011	0.011			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.999		.9884	mg/L	98.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.999	U	.9995	mg/L	100.1	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.999	U	.9921	mg/L	99.3	70	130	0.74	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05199	mg/L	104	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05		.05044	mg/L	100.9	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05	.0024	.05356	mg/L	102.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05	.0024	.05462	mg/L	104.4	70	130	1.96	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.05021	mg/L	100.4	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0003	0.0003			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00022	0.00022			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.05		.05053	mg/L	101.1	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.05	.0005	.05585	mg/L	110.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.05	.0005	.05468	mg/L	108.4	70	130	2.12	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04767	mg/L	95.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0006	0.0006			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.0486	mg/L	97	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	.0102	.05896	mg/L	97.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	.0102	.06024	mg/L	99.9	70	130	2.15	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355990													
WG355990ICV	ICV	12/06/13 4:33	MS131202-2	.05		.0492	mg/L	98.4	90	110			
WG355990ICB	ICB	12/06/13 4:36				U	mg/L		-0.0006	0.0006			
WG355846LRB	LRB	12/06/13 4:40				U	mg/L		-0.00044	0.00044			
WG355846LFB	LFB	12/06/13 4:43	MS131118-2	.0501		.05125	mg/L	102.3	85	115			
L15716-05LFM	LFM	12/06/13 5:41	MS131118-2	.0501	.0003	.05176	mg/L	102.7	70	130			
L15716-05LFMD	LFMD	12/06/13 5:44	MS131118-2	.0501	.0003	.05089	mg/L	101	70	130	1.7	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355679													
WG355679ICV	ICV	12/02/13 18:10	II131113-1	2		1.914	mg/L	95.7	95	105			
WG355679ICB	ICB	12/02/13 18:16				U	mg/L		-0.03	0.03			
WG355679LFB	LFB	12/02/13 18:29	II131119-3	.5		.5	mg/L	100	85	115			
L15749-01AS	AS	12/02/13 19:24	II131119-3	.5	.93	1.322	mg/L	86.4	85	115			
L15749-01ASD	ASD	12/02/13 19:27	II131119-3	.5	.93	1.324	mg/L	86.8	85	115	0.15	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.929	mg/L	96.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.487	mg/L	97.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	U	.487	mg/L	97.4	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	U	.491	mg/L	98.2	70	130	0.82	20	

SPF Water Engineering

ACZ Project ID: ***L15771***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15771-01	WG355679	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356069	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L15771-02	WG355679	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356069	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L15771***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15771-03	WG356452	Total Hot Plate Digestion	M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.
	WG355679	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356069	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15771
Date Received: 11/27/2013 10:22
Received By: mtb
Date Printed: 11/27/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3284	4.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L15771

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2014-GW							
GW-1	11/21/13 15:35	GW	8	X							
PW-1	11/21/13 14:50	GW	8	X							
59761	11/21/2013 16:25	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	11-21-13 20:00		11-22-13 10:02

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15771 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 12, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15772

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 27, 2013. This project has been assigned to ACZ's project number, L15772. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15772. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 11, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L15772-01***
Date Sampled: *11/21/13 13:40*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:45	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 15:02	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 15:08	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/05/13 15:22	las
Total Hot Plate Digestion	M200.2 ICP								12/03/13 12:36	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L15772-01***
Date Sampled: *11/21/13 13:40*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 14:23	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 20:58	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 5:04	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 21:11	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0356			mg/L	0.0002	0.001	12/05/13 5:04	msh
Arsenic, total	M200.8 ICP-MS	1	0.0371			mg/L	0.0002	0.001	12/06/13 21:11	pmc
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/03/13 14:23	aeb
Barium, total	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	12/03/13 20:58	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 5:04	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 21:11	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 14:23	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 20:58	aeb
Boron, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	12/03/13 14:23	aeb
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	12/03/13 20:58	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:04	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:11	pmc
Calcium, dissolved	M200.7 ICP	1	1.3			mg/L	0.2	1	12/03/13 14:23	aeb
Calcium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	12/03/13 20:58	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 5:04	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/06/13 21:11	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 5:04	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 21:11	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 5:04	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 21:11	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 14:23	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:58	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 14:23	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 20:58	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:04	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:11	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	12/03/13 14:23	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/03/13 20:58	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/03/13 14:23	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/03/13 20:58	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	12/05/13 5:04	msh
Manganese, total	M200.8 ICP-MS	1	0.0013	B	*	mg/L	0.0005	0.003	12/09/13 20:05	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:23	las
Mercury, total	M1631, Atomic Fluorescence	2		U	*	ng/L	0.4	1	12/03/13 14:37	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0150			mg/L	0.0005	0.003	12/05/13 5:04	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0157			mg/L	0.0005	0.003	12/06/13 21:11	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 5:04	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/06/13 21:11	pmc
Potassium, dissolved	M200.7 ICP	1	5.8			mg/L	0.3	2	12/03/13 14:23	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L15772-01***
Date Sampled: *11/21/13 13:40*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.3	2	12/03/13 20:58	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 14:23	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 20:58	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/05/13 5:04	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/06/13 21:11	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 18:23	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 21:11	pmc
Sodium, dissolved	M200.7 ICP	1	109			mg/L	0.3	2	12/03/13 14:23	aeb
Sodium, total	M200.7 ICP	1	112			mg/L	0.3	2	12/03/13 20:58	aeb
Strontium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	12/03/13 14:23	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 20:58	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:04	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:11	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 5:04	msh
Tin, total	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	12/06/13 21:11	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 14:23	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 20:58	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:04	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:11	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/05/13 5:04	msh
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	12/06/13 21:11	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	12/03/13 14:23	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 20:58	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: POISON SPRING

ACZ Sample ID: ***L15772-01***
Date Sampled: *11/21/13 13:40*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	111			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1	52			mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	163			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	9.03		*	mg/L	0.5	2.5	12/10/13 0:19	tcd
Conductivity @25C	SM2510B	1	495			umhos/cm	1	10	12/04/13 22:28	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:08	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:26	bsu
Fluoride	M300.0 - Ion Chromatography	1	0.73		*	mg/L	0.1	0.5	12/10/13 0:19	tcd
Hardness as CaCO3	SM2340B - Calculation		3	B		mg/L	1	7	12/12/13 9:02	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/06/13 23:39	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:47	bsu
pH (lab)	SM4500H+ B									
pH		1	9.2	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B		mg/L	0.01	0.05	12/07/13 12:41	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	350			mg/L	10	20	11/27/13 12:37	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/27/13 14:32	mss3
Sulfate	M300.0 - Ion Chromatography	1	59.0			mg/L	0.5	2.5	12/10/13 0:19	tcd

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L15772-02***
Date Sampled: *11/21/13 14:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 11:55	mla
Cyanide, WAD	SM4500-CN I- distillation								12/03/13 15:07	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/06/13 15:19	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/05/13 15:40	las
Total Hot Plate Digestion	M200.2 ICP								12/03/13 12:48	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L15772-02***
Date Sampled: *11/21/13 14:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/03/13 14:26	aeb
Aluminum, total	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	12/03/13 21:08	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/05/13 5:07	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/06/13 21:14	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0231			mg/L	0.0002	0.001	12/05/13 5:07	msh
Arsenic, total	M200.8 ICP-MS	1	0.0237			mg/L	0.0002	0.001	12/06/13 21:14	pmc
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	12/03/13 14:26	aeb
Barium, total	M200.7 ICP	1	0.022			mg/L	0.003	0.02	12/03/13 21:08	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/05/13 5:07	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 21:14	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 14:26	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/03/13 21:08	aeb
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/03/13 14:26	aeb
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/03/13 21:08	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:07	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:14	pmc
Calcium, dissolved	M200.7 ICP	1	36.7			mg/L	0.2	1	12/03/13 14:26	aeb
Calcium, total	M200.7 ICP	1	36.9			mg/L	0.2	1	12/03/13 21:08	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/05/13 5:07	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/06/13 21:14	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	12/05/13 5:07	msh
Cobalt, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	12/06/13 21:14	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/05/13 5:07	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/06/13 21:14	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 14:26	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 21:08	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/03/13 14:26	aeb
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	12/03/13 21:08	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:07	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:14	pmc
Lithium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/03/13 14:26	aeb
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/03/13 21:08	aeb
Magnesium, dissolved	M200.7 ICP	1	12			mg/L	0.2	1	12/03/13 14:26	aeb
Magnesium, total	M200.7 ICP	1	12.1			mg/L	0.2	1	12/03/13 21:08	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0241			mg/L	0.0005	0.003	12/05/13 5:07	msh
Manganese, total	M200.8 ICP-MS	1	0.0322		*	mg/L	0.0005	0.003	12/06/13 21:14	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	12/06/13 11:28	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	12/03/13 14:42	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0072			mg/L	0.0005	0.003	12/05/13 5:07	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0077			mg/L	0.0005	0.003	12/06/13 21:14	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/05/13 5:07	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/06/13 21:14	pmc
Potassium, dissolved	M200.7 ICP	1	8.2			mg/L	0.3	2	12/03/13 14:26	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L15772-02***
Date Sampled: *11/21/13 14:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.1			mg/L	0.3	2	12/03/13 21:08	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 14:26	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/03/13 21:08	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	12/05/13 5:07	msh
Selenium, total	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	12/06/13 21:14	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/10/13 18:26	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/06/13 21:14	pmc
Sodium, dissolved	M200.7 ICP	1	65.3			mg/L	0.3	2	12/03/13 14:26	aeb
Sodium, total	M200.7 ICP	1	65.6			mg/L	0.3	2	12/03/13 21:08	aeb
Strontium, dissolved	M200.7 ICP	1	0.20		*	mg/L	0.01	0.05	12/03/13 14:26	aeb
Strontium, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	12/03/13 21:08	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/05/13 5:07	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/06/13 21:14	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/05/13 5:07	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/06/13 21:14	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 14:26	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/03/13 21:08	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0001	0.0005	12/05/13 5:07	msh
Uranium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	12/06/13 21:14	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0178			mg/L	0.0002	0.001	12/05/13 5:07	msh
Vanadium, total	M200.8 ICP-MS	1	0.0193			mg/L	0.0002	0.001	12/06/13 21:14	pmc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	12/03/13 14:26	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/03/13 21:08	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L15772-02***
Date Sampled: *11/21/13 14:55*
Date Received: *11/27/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	165			mg/L	2	20	12/04/13 0:00	khw
Carbonate as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Hydroxide as CaCO3		1		U		mg/L	2	20	12/04/13 0:00	khw
Total Alkalinity		1	165			mg/L	2	20	12/04/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	20.6		*	mg/L	0.5	2.5	12/10/13 0:37	tcd
Conductivity @25C	SM2510B	1	575			umhos/cm	1	10	12/04/13 22:37	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:09	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 17:27	bsu
Fluoride	M300.0 - Ion Chromatography	1	0.57		*	mg/L	0.1	0.5	12/10/13 0:37	tcd
Hardness as CaCO3	SM2340B - Calculation		141			mg/L	1	7	12/12/13 9:02	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.39		*	mg/L	0.02	0.1	12/06/13 23:44	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/06/13 15:48	bsu
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	12/04/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/04/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.06			mg/L	0.01	0.05	12/07/13 12:42	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	400			mg/L	10	20	11/27/13 12:38	mss3
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	11/27/13 14:33	mss3
Sulfate	M300.0 - Ion Chromatography	1	89.1			mg/L	0.5	2.5	12/10/13 0:37	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15772***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870PBW1	PBW	12/04/13 15:50				U	mg/L		-20	20			
WG355870LCSW2	LCSW	12/04/13 16:04	WC131126-	820.0001		743	mg/L	90.6	90	110			
WG355870LCSW5	LCSW	12/04/13 21:04	WC131126-	820.0001		772.2	mg/L	94.2	90	110			
WG355870PBW2	PBW	12/04/13 21:12				U	mg/L		-20	20			
L15772-02DUP	DUP	12/04/13 22:46			165	165.1	mg/L				0.1	20	
WG355870LCSW8	LCSW	12/05/13 0:26	WC131126-	820.0001		764.8	mg/L	93.3	90	110			
WG355870PBW3	PBW	12/05/13 0:35				2.1	mg/L		-20	20			
WG355870LCSW11	LCSW	12/05/13 3:32	WC131126-	820.0001		773.9	mg/L	94.4	90	110			
WG355870PBW4	PBW	12/05/13 3:40				2.2	mg/L		-20	20			
WG355870LCSW14	LCSW	12/05/13 6:40	WC131126-	820.0001		777.4	mg/L	94.8	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.09	0.09			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1.0011		1.073	mg/L	107.2	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1.0011	.04	1.107	mg/L	106.6	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1.0011	.04	1.104	mg/L	106.3	85	115	0.27	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.98	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.09	0.09			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.066	0.066			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0011		1.018	mg/L	101.7	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0011	U	1.038	mg/L	103.7	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0011	U	1.035	mg/L	103.4	70	130	0.29	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.02		.02091	mg/L	104.6	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0012	0.0012			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.01		.01038	mg/L	103.8	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.01	U	.01063	mg/L	106.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.01	U	.01078	mg/L	107.8	70	130	1.4	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02		.02033	mg/L	101.7	90	110			
WG356064ICB	ICB	12/06/13 20:23				.00047	mg/L		-0.0012	0.0012			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00088	0.00088			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.01		.01124	mg/L	112.4	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.01	U	.01122	mg/L	112.2	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.01	U	.01115	mg/L	111.5	70	130	0.63	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05239	mg/L	104.8	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0006	0.0006			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04954	mg/L	99	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0315	.08596	mg/L	108.8	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0315	.08691	mg/L	110.7	70	130	1.1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05226	mg/L	104.5	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0006	0.0006			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00044	0.00044			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05181	mg/L	103.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0013	.05588	mg/L	109.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0013	.0551	mg/L	107.5	70	130	1.41	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		1.96	mg/L	98	95	105			
WG355744ICB	ICB	12/03/13 13:07				.0032	mg/L		-0.009	0.009			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	.5		.4986	mg/L	99.7	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	.5	.066	.5643	mg/L	99.7	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	.5	.066	.565	mg/L	99.8	85	115	0.12	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.9805	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				.0041	mg/L		-0.009	0.009			
WG355724LRB	LRB	12/03/13 19:52				.0032	mg/L		-0.0066	0.0066			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.4768	mg/L	95.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	.047	.527	mg/L	96	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	.047	.528	mg/L	96.2	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04872	mg/L	97.4	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.00015	0.00015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.04558	mg/L	91	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	U	.05035	mg/L	100.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	U	.05038	mg/L	100.6	70	130	0.06	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04662	mg/L	93.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.00015	0.00015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.04783	mg/L	95.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.00542	.05579	mg/L	100.5	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.00542	.05486	mg/L	98.7	70	130	1.68	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2.018	mg/L	100.9	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.12	0.12			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1		1.042	mg/L	104.2	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1	U	1.059	mg/L	105.9	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1	U	1.093	mg/L	109.3	85	115	3.16	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.009	mg/L	100.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.12	0.12			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.088	0.088			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1		1.056	mg/L	105.6	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1	U	1.049	mg/L	104.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1	U	1.025	mg/L	102.5	70	130	2.31	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2.024	mg/L	101.2	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.03	0.03			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	.5005		.523	mg/L	104.5	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	.5005	.02	.546	mg/L	105.1	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	.5005	.02	.553	mg/L	106.5	85	115	1.27	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.012	mg/L	100.6	95	105			
WG355798ICB	ICB	12/03/13 19:39				.013	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				.011	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5005		.486	mg/L	97.1	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5005	.08	.547	mg/L	93.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5005	.08	.557	mg/L	95.3	70	130	1.81	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04989	mg/L	99.8	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.04941	mg/L	98.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	U	.0488	mg/L	97.4	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	U	.04951	mg/L	98.8	70	130	1.44	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04953	mg/L	99.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.05045	mg/L	100.7	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.0038	.05205	mg/L	96.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.0038	.05128	mg/L	94.8	70	130	1.49	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	100		98.46	mg/L	98.5	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.6	0.6			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	68.00225		70.49	mg/L	103.7	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	68.00225	213	274.5	mg/L	90.4	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	68.00225	213	273.9	mg/L	89.6	85	115	0.22	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		99.33	mg/L	99.3	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.6	0.6			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.44	0.44			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	68.00225		67.6	mg/L	99.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	68.00225	42.6	111.1	mg/L	100.7	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	68.00225	42.6	111.9	mg/L	101.9	70	130	0.72	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30.3	mg/L	101	90	110			
L15750-03DUP	DUP	12/09/13 21:02			U	U	mg/L				0	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	39	99.7	mg/L	101.2	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04867	mg/L	97.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04784	mg/L	95.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0007	.04774	mg/L	94	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0007	.04897	mg/L	96.4	70	130	2.54	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.0494	mg/L	98.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04947	mg/L	98.8	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.04824	mg/L	96.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.04753	mg/L	95	70	130	1.48	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05129	mg/L	102.6	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.00015	0.00015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05321	mg/L	106.3	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.00013	.04865	mg/L	96.9	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.00013	.04893	mg/L	97.5	70	130	0.57	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04925	mg/L	98.5	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.00015	0.00015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05074	mg/L	101.4	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.2394	.2817	mg/L	84.5	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.2394	.2783	mg/L	77.7	70	130	1.21	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW1	LCSW	12/04/13 15:52	PCN42442	1408.8		1421.2	umhos/cm	100.9	90	110			
WG355870LCSW4	LCSW	12/04/13 20:52	PCN42442	1408.8		1404.8	umhos/cm	99.7	90	110			
L15772-02DUP	DUP	12/04/13 22:46			575	578	umhos/cm				0.5	20	
WG355870LCSW7	LCSW	12/05/13 0:12	PCN42442	1408.8		1392.6	umhos/cm	98.9	90	110			
WG355870LCSW10	LCSW	12/05/13 3:20	PCN42442	1408.8		1382.3	umhos/cm	98.1	90	110			
WG355870LCSW13	LCSW	12/05/13 6:28	PCN42442	1408.8		1375.2	umhos/cm	97.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04935	mg/L	98.7	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04762	mg/L	95.1	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.04785	mg/L	95.6	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.0488	mg/L	97.5	70	130	1.97	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04944	mg/L	98.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04906	mg/L	98	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0035	.04902	mg/L	90.9	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0035	.04835	mg/L	89.6	70	130	1.38	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355900													
WG355836LRB	LRB	12/04/13 18:57				U	mg/L		-0.003	0.003			
WG355836LFB	LFB	12/04/13 18:58	WI131202-2	.2		.1849	mg/L	92.5	90	110			
L15768-01DUP	DUP	12/04/13 19:00			U	U	mg/L				0	20	RA
L15770-01LFM	LFM	12/04/13 19:01	WI131202-2	.2	U	.1813	mg/L	90.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L15772***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355780LRB	LRB	12/04/13 17:14				U	mg/L		-0.003	0.003			
WG355780LFB	LFB	12/04/13 17:15	WI131202-4	.2		.1964	mg/L	98.2	90	110			
L15728-01DUP	DUP	12/04/13 17:16			U	U	mg/L				0	20	RA
L15728-02LFM	LFM	12/04/13 17:18	WI131202-4	.2	U	.1877	mg/L	93.9	90	110			
L15772-02DUP	DUP	12/04/13 17:28			U	U	mg/L				0	20	RA
L15799-01LFM	LFM	12/04/13 17:30	WI131202-4	.2	U	.1888	mg/L	94.4	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	1.5		1.52	mg/L	101.3	90	110			
L15750-03DUP	DUP	12/09/13 21:02			13.5	13.6	mg/L				0.7	20	RA
L15763-03AS	AS	12/09/13 22:14	WI131011-1	3	.54	3.74	mg/L	106.7	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	1.5		1.53	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		1.98	mg/L	99	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.3	0.3			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1.001		1.07	mg/L	106.9	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1.001	U	1.07	mg/L	106.9	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1.001	U	1.06	mg/L	105.9	85	115	0.94	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.01	mg/L	100.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.3	0.3			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.22	0.22			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.001		1.01	mg/L	100.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.001	U	1.02	mg/L	101.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.001	U	1.01	mg/L	100.9	70	130	0.99	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2.022	mg/L	101.1	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.06	0.06			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1.0014		1.035	mg/L	103.4	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1.0014	2.03	2.971	mg/L	94	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1.0014	2.03	2.974	mg/L	94.3	85	115	0.1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.995	mg/L	99.8	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.06	0.06			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.044	0.044			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0014		.975	mg/L	97.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0014	U	.982	mg/L	98.1	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0014	U	.988	mg/L	98.7	70	130	0.61	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05332	mg/L	106.6	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05157	mg/L	103	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.05053	mg/L	101	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.05177	mg/L	103.4	70	130	2.42	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05096	mg/L	101.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04945	mg/L	98.8	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.04973	mg/L	99.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.0501	mg/L	100.1	70	130	0.74	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		1.955	mg/L	97.8	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.06	0.06			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1		.984	mg/L	98.4	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1	.09	1.073	mg/L	98.3	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1	.09	1.071	mg/L	98.1	85	115	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.94	mg/L	97	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.06	0.06			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.044	0.044			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1		.953	mg/L	95.3	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1	.04	.998	mg/L	95.8	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1	.04	.993	mg/L	95.3	70	130	0.5	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	100		97.01	mg/L	97	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.6	0.6			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	49.99695		49.71	mg/L	99.4	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	49.99695	15.6	64.49	mg/L	97.8	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	49.99695	15.6	64.7	mg/L	98.2	85	115	0.33	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		97.65	mg/L	97.7	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.6	0.6			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.44	0.44			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	49.99695		47.45	mg/L	94.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	49.99695	10.3	58.11	mg/L	95.6	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	49.99695	10.3	58.29	mg/L	96	70	130	0.31	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05309	mg/L	106.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05325	mg/L	106.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0059	.05596	mg/L	100	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0059	.05251	mg/L	93.1	70	130	6.36	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05061	mg/L	101.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05054	mg/L	101	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	1000	1000	mg/L	0	70	130			M3
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	1000	1000	mg/L	0	70	130	0	20	M3
WG356143													
WG356143ICV	ICV	12/09/13 19:51	MS131202-2	.05		.0509	mg/L	101.8	90	110			
WG356143ICB	ICB	12/09/13 19:53				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/09/13 19:55				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/09/13 19:56	MS131118-2	.05005		.05029	mg/L	100.5	85	115			
L15749-02LFM	LFM	12/09/13 20:02	MS131118-2	.05005	90	91.5	mg/L	2997	70	130			M3
L15749-02LFMD	LFMD	12/09/13 20:04	MS131118-2	.05005	90	92.5	mg/L	4995	70	130	1.09	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15770-03MS	MS	12/06/13 10:48	HG131206-6	2	U	2.02	ng/L	101	71	125			
L15770-03MSD	MSD	12/06/13 10:53	HG131206-6	2	U	2.06	ng/L	103	71	125	1.96	24	
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L15772***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
L15826-02MS	MS	12/03/13 15:38	HG131010-5	2	U	2.05	ng/L	102.5	71	125			
L15826-02MSD	MSD	12/03/13 15:43	HG131010-5	2	U	1.92	ng/L	96	71	125	6.55	24	
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.02006		.0193	mg/L	96.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0015	0.0015			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05		.04778	mg/L	95.6	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05	.0044	.05164	mg/L	94.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05	.0044	.05232	mg/L	95.8	70	130	1.31	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0015	0.0015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.0011	0.0011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05		.05096	mg/L	101.9	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05	U	.05019	mg/L	100.4	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05	U	.05014	mg/L	100.3	70	130	0.1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04956	mg/L	99.1	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0018	0.0018			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04775	mg/L	95.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.0471	mg/L	94.1	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.04826	mg/L	96.4	70	130	2.43	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.04906	mg/L	98.1	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0018	0.0018			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00132	0.00132			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04882	mg/L	97.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.2792	.3295	mg/L	100.5	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.2792	.3256	mg/L	92.7	70	130	1.19	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356065													
WG356065ICV	ICV	12/06/13 19:12	WI131015-1	2.416		2.407	mg/L	99.6	90	110			
WG356065ICB	ICB	12/06/13 19:14				U	mg/L		-0.06	0.06			
WG356069													
WG356069LFB1	LFB	12/06/13 23:01	WI130816-3	2		2.057	mg/L	102.9	90	110			
WG356069LFB2	LFB	12/06/13 23:36	WI130816-3	2		2.06	mg/L	103	90	110			
L15771-03AS	AS	12/06/13 23:38	WI130816-3	2	1.79	3.76	mg/L	98.5	90	110			
L15772-01DUP	DUP	12/06/13 23:41			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356035													
WG356035ICV	ICV	12/06/13 13:45	WI131021-1	1.003		1.021	mg/L	101.8	90	110			
WG356035ICB	ICB	12/06/13 13:48				U	mg/L		-0.15	0.15			
WG356046													
WG356046LFB	LFB	12/06/13 15:17	WI121218-3	1		1.016	mg/L	101.6	90	110			
L15745-07AS	AS	12/06/13 15:35	WI121218-3	1	U	1.011	mg/L	101.1	90	110			
L15760-01DUP	DUP	12/06/13 15:37			.16	.147	mg/L				8.5	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355870													
WG355870LCSW3	LCSW	12/04/13 16:07	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG355870LCSW6	LCSW	12/04/13 21:07	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15772-02DUP	DUP	12/04/13 22:46			8.2	8.23	units				0.4	20	
WG355870LCSW9	LCSW	12/05/13 0:30	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW12	LCSW	12/05/13 3:35	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG355870LCSW15	LCSW	12/05/13 6:43	PCN41777	6		6.05	units	100.8	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L15772***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356080													
WG356080ICV	ICV	12/07/13 12:07	WI131104-3	.65228		.692	mg/L	106.1	90	110			
WG356080ICB	ICB	12/07/13 12:10				U	mg/L		-0.03	0.03			
WG356022LRB	LRB	12/07/13 12:11				U	mg/L		-0.03	0.03			
WG356022LFB	LFB	12/07/13 12:12	WI131206-2	.5		.488	mg/L	97.6	90	110			
L15760-01LFM	LFM	12/07/13 12:55	WI131206-2	.5	1.03	1.54	mg/L	102	90	110			
L15761-01DUP	DUP	12/07/13 12:57			4.7	4.66	mg/L				0.9	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	20		19.67	mg/L	98.4	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.9	0.9			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	99.94539		100.6	mg/L	100.7	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	99.94539	3.4	105.2	mg/L	101.9	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	99.94539	3.4	104.8	mg/L	101.5	85	115	0.38	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	20		19.79	mg/L	99	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.9	0.9			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.66	0.66			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	99.94539		96.67	mg/L	96.7	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	99.94539	6	104.2	mg/L	98.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	99.94539	6	104.7	mg/L	98.8	70	130	0.48	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355603													
WG355603PBW	PBW	11/27/13 12:10				U	mg/L		-20	20			
WG355603LCSW	LCSW	11/27/13 12:11	PCN44256	260		250	mg/L	96.2	80	120			
L15772-02DUP	DUP	11/27/13 12:39			400	410	mg/L				2.5	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355609													
WG355609PBW	PBW	11/27/13 14:10				U	mg/L		-15	15			
WG355609LCSW	LCSW	11/27/13 14:11	PCN44256	160		147	mg/L	91.9	80	120			
L15772-02DUP	DUP	11/27/13 14:34			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L15772***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2	mg/L	100	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.3	0.3			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	1.0009		1.07	mg/L	106.9	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		2.02	mg/L	101	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.3	0.3			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.22	0.22			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	1.0009		1.04	mg/L	103.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05234	mg/L	104.7	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04977	mg/L	99.4	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	.0046	.05946	mg/L	109.6	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	.0046	.06057	mg/L	111.8	70	130	1.85	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05126	mg/L	102.5	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.04983	mg/L	99.6	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0001	.05583	mg/L	111.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0001	.05564	mg/L	111	70	130	0.34	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355931													
WG355931ICV	ICV	12/10/13 16:52	MS131202-2	.02002		.01849	mg/L	92.4	90	110			
WG355931ICB	ICB	12/10/13 16:55				U	mg/L		-0.00015	0.00015			
WG355931LFB	LFB	12/10/13 16:58	MS131118-2	.01001		.008911	mg/L	89	85	115			
L15772-02AS	AS	12/10/13 18:30	MS131118-2	.01001	U	.008195	mg/L	81.9	70	130			
L15772-02ASD	ASD	12/10/13 18:33	MS131118-2	.01001	U	.008368	mg/L	83.6	70	130	2.09	20	

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ACZ Project ID: ***L15772***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.02002		.01945	mg/L	97.2	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.00015	0.00015			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00011	0.00011			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.01001		.009143	mg/L	91.3	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.01001	U	.008134	mg/L	81.3	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.01001	U	.008324	mg/L	83.2	70	130	2.31	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	100		98.47	mg/L	98.5	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.9	0.9			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	100.0204		100.9	mg/L	100.9	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	100.0204	38.3	138.4	mg/L	100.1	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	100.0204	38.3	137.5	mg/L	99.2	85	115	0.65	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	100		99.74	mg/L	99.7	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.9	0.9			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.66	0.66			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	100.0204		97.03	mg/L	97	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	100.0204	24.1	123.4	mg/L	99.3	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	100.0204	24.1	124.2	mg/L	100.1	70	130	0.65	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		2.017	mg/L	100.9	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.03	0.03			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	.5		.508	mg/L	101.6	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	.5	2.84	3.229	mg/L	77.8	85	115			M3
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	.5	2.84	3.216	mg/L	75.2	85	115	0.4	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.999	mg/L	100	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.476	mg/L	95.2	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	.23	.707	mg/L	95.4	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	.23	.711	mg/L	96.2	70	130	0.56	20	

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ACZ Project ID: ***L15772***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356091													
WG356091LFB2	LFB	12/09/13 20:26	WI131011-1	30		30	mg/L	100	90	110			
L15750-03DUP	DUP	12/09/13 21:02			1300	1300	mg/L				0	20	
L15763-03AS	AS	12/09/13 22:14	WI131011-1	60	81.4	142	mg/L	101	90	110			
WG356091LFB1	LFB	12/10/13 16:26	WI131011-1	30		30.2	mg/L	100.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05259	mg/L	105.2	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.05166	mg/L	103.2	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.05129	mg/L	102.5	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.0522	mg/L	104.3	70	130	1.76	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05245	mg/L	104.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05074	mg/L	101.4	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	.0003	.05192	mg/L	103.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	.0003	.05308	mg/L	105.5	70	130	2.21	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05015		.05079	mg/L	101.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05005		.04656	mg/L	93	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05005	U	.04602	mg/L	91.9	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05005	U	.04671	mg/L	93.3	70	130	1.49	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05015		.05255	mg/L	104.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05005		.05081	mg/L	101.5	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05005	U	.05013	mg/L	100.2	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05005	U	.05059	mg/L	101.1	70	130	0.91	20	

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ACZ Project ID: ***L15772***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		1.9772	mg/L	98.9	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.015	0.015			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	.999		1.031	mg/L	103.2	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	.999	.008	1.025	mg/L	101.8	85	115			
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	.999	.008	1.027	mg/L	102	85	115	0.19	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.9452	mg/L	97.3	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.015	0.015			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.011	0.011			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.999		.9884	mg/L	98.9	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.999	U	.9995	mg/L	100.1	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.999	U	.9921	mg/L	99.3	70	130	0.74	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.05199	mg/L	104	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0003	0.0003			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.05		.05044	mg/L	100.9	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.05	.0024	.05356	mg/L	102.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.05	.0024	.05462	mg/L	104.4	70	130	1.96	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.05195	mg/L	103.9	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0003	0.0003			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00022	0.00022			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.05		.05115	mg/L	102.3	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.05	.004	.05634	mg/L	104.7	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.05	.004	.05799	mg/L	108	70	130	2.89	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355894													
WG355894ICV	ICV	12/05/13 3:39	MS131018-2	.05		.04767	mg/L	95.3	90	110			
WG355894ICB	ICB	12/05/13 3:42				U	mg/L		-0.0006	0.0006			
WG355894LFB	LFB	12/05/13 3:46	MS131118-2	.0501		.0486	mg/L	97	85	115			
L15771-02AS	AS	12/05/13 4:47	MS131118-2	.0501	.0102	.05896	mg/L	97.3	70	130			
L15771-02ASD	ASD	12/05/13 4:50	MS131118-2	.0501	.0102	.06024	mg/L	99.9	70	130	2.15	20	

SPF Water Engineering

ACZ Project ID: ***L15772***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356064													
WG356064ICV	ICV	12/06/13 20:20	MS131202-2	.05		.0489	mg/L	97.8	90	110			
WG356064ICB	ICB	12/06/13 20:23				U	mg/L		-0.0006	0.0006			
WG355922LRB	LRB	12/06/13 20:26				U	mg/L		-0.00044	0.00044			
WG355922LFB	LFB	12/06/13 20:29	MS131118-2	.0501		.05061	mg/L	101	85	115			
L15749-02LFM	LFM	12/06/13 21:05	MS131118-2	.0501	.0017	.05334	mg/L	103.1	70	130			
L15749-02LFMD	LFMD	12/06/13 21:08	MS131118-2	.0501	.0017	.05217	mg/L	100.7	70	130	2.22	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355744													
WG355744ICV	ICV	12/03/13 13:01	II131113-1	2		1.978	mg/L	98.9	95	105			
WG355744ICB	ICB	12/03/13 13:07				U	mg/L		-0.03	0.03			
WG355744LFB	LFB	12/03/13 13:20	II131119-3	.5		.515	mg/L	103	85	115			
L15767-02AS	AS	12/03/13 14:14	II131119-3	.5	2.28	2.692	mg/L	82.4	85	115			M3
L15767-02ASD	ASD	12/03/13 14:17	II131119-3	.5	2.28	2.693	mg/L	82.6	85	115	0.04	20	M3

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355798													
WG355798ICV	ICV	12/03/13 19:33	II131111-1	2		1.929	mg/L	96.5	95	105			
WG355798ICB	ICB	12/03/13 19:39				U	mg/L		-0.03	0.03			
WG355724LRB	LRB	12/03/13 19:52				U	mg/L		-0.022	0.022			
WG355724LFB	LFB	12/03/13 19:55	II131119-3	.5		.487	mg/L	97.4	85	115			
L15771-03LFM	LFM	12/03/13 20:52	II131119-3	.5	U	.487	mg/L	97.4	70	130			
L15771-03LFMD	LFMD	12/03/13 20:55	II131119-3	.5	U	.491	mg/L	98.2	70	130	0.82	20	

SPF Water Engineering ACZ Project ID: ***L15772***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15772-01	WG356143	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355755	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG355744	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356069	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L15772***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15772-02	WG356064	Manganese, total	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355744	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356091	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355888	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356091	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356069	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356046	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355609	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15772
Date Received: 11/27/2013 10:23
Received By: mtb
Date Printed: 11/27/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
4096	5.6	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L15772

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Poison Spring	11/21/13 13:40		8	X							
Negro Rock Creek	11/21/13 14:55		8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/22/13 6:00		11.27.13 10:28

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15772 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 18, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15820

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15820. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15820. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 17, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

December 18, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15820

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15820. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports.

Some of the dissolved metals values exceed the corresponding total values for project L15820. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59766

ACZ Sample ID: ***L15820-01***
Date Sampled: *11/24/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 15:42	mpb
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 10:54	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 12:58	bsu
Total Hot Plate Digestion	M200.2 ICP								12/11/13 10:23	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 9:13	pmc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59766

ACZ Sample ID: ***L15820-01***
Date Sampled: *11/24/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 22:45	jjc
Aluminum, total	M200.7 ICP	1	3.70			mg/L	0.03	0.2	12/11/13 20:46	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	12/12/13 5:20	pmc
Antimony, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0004	0.002	12/14/13 0:27	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.1958			mg/L	0.0002	0.001	12/12/13 5:20	pmc
Arsenic, total	M200.8 ICP-MS	5	0.202			mg/L	0.001	0.005	12/16/13 20:16	pmc
Barium, dissolved	M200.7 ICP	1	0.019	B		mg/L	0.003	0.02	12/04/13 22:45	jjc
Barium, total	M200.7 ICP	1	0.069			mg/L	0.003	0.02	12/11/13 20:46	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	12/12/13 5:20	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00041			mg/L	0.00005	0.0003	12/14/13 0:27	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 22:45	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:33	jjc
Boron, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	12/04/13 22:45	jjc
Boron, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	12/11/13 20:46	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:20	pmc
Cadmium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	12/14/13 0:27	pmc
Calcium, dissolved	M200.7 ICP	1	40.1			mg/L	0.2	1	12/04/13 22:45	jjc
Calcium, total	M200.7 ICP	1	41.5			mg/L	0.2	1	12/11/13 20:46	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 5:20	pmc
Chromium, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.002	12/14/13 0:27	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00106			mg/L	0.00005	0.0003	12/12/13 5:20	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00160			mg/L	0.00005	0.0003	12/14/13 0:27	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:20	pmc
Copper, total	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	12/14/13 0:27	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:45	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:46	jjc
Iron, dissolved	M200.7 ICP	1	1.06			mg/L	0.02	0.05	12/04/13 22:45	jjc
Iron, total	M200.7 ICP	1	5.38			mg/L	0.02	0.05	12/11/13 20:46	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:20	pmc
Lead, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	12/14/13 0:27	pmc
Lithium, dissolved	M200.7 ICP	1	0.57			mg/L	0.02	0.1	12/04/13 22:45	jjc
Lithium, total	M200.7 ICP	1	0.56			mg/L	0.02	0.1	12/11/13 20:46	jjc
Magnesium, dissolved	M200.7 ICP	1	3.2			mg/L	0.2	1	12/04/13 22:45	jjc
Magnesium, total	M200.7 ICP	1	3.6			mg/L	0.2	1	12/11/13 20:46	jjc
Manganese, dissolved	M200.8 ICP-MS	4	0.442			mg/L	0.002	0.01	12/13/13 1:15	pmc
Manganese, total	M200.8 ICP-MS	5	0.506			mg/L	0.003	0.01	12/16/13 20:16	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.1			ng/L	0.2	0.5	12/06/13 11:33	las
Mercury, total	M1631, Atomic Fluorescence	10	28			ng/L	2	5	12/03/13 14:47	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0281			mg/L	0.0005	0.003	12/12/13 5:20	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0269			mg/L	0.0005	0.003	12/14/13 0:27	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0006	0.003	12/12/13 5:20	pmc
Nickel, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0006	0.003	12/14/13 0:27	pmc
Potassium, dissolved	M200.7 ICP	1	10			mg/L	0.3	2	12/04/13 22:45	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59766

ACZ Sample ID: ***L15820-01***
Date Sampled: *11/24/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	10.6			mg/L	0.3	2	12/11/13 20:46	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:45	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:46	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/12/13 5:20	pmc
Selenium, total	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	12/14/13 0:27	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:20	pmc
Silver, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/14/13 0:27	pmc
Sodium, dissolved	M200.7 ICP	1	144			mg/L	0.3	2	12/04/13 22:45	jjc
Sodium, total	M200.7 ICP	1	140			mg/L	0.3	2	12/11/13 20:46	jjc
Strontium, dissolved	M200.7 ICP	1	0.14		*	mg/L	0.01	0.05	12/04/13 22:45	jjc
Strontium, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/11/13 20:46	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:20	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:27	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 5:20	pmc
Tin, total	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	12/14/13 0:27	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 22:45	jjc
Titanium, total	M200.7 ICP	1	0.151			mg/L	0.005	0.03	12/11/13 20:46	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	12/12/13 5:20	pmc
Uranium, total	M200.8 ICP-MS	1	0.0012			mg/L	0.0001	0.0005	12/14/13 0:27	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	12/12/13 5:20	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0049			mg/L	0.0002	0.001	12/14/13 0:27	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 22:45	jjc
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/11/13 20:46	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59766

ACZ Sample ID: ***L15820-01***
Date Sampled: *11/24/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	91		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	91		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	12.0		*	mg/L	0.5	2.5	12/13/13 13:38	tcd
Conductivity @25C	SM2510B	1	879		*	umhos/cm	1	10	12/07/13 22:04	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:10	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:29	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.66		*	mg/L	0.1	0.5	12/13/13 13:38	tcd
Hardness as CaCO3	SM2340B - Calculation		113			mg/L	1	7	12/18/13 14:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.03	B	*	mg/L	0.02	0.1	12/12/13 23:09	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:28	tcd
pH (lab)	SM4500H+ B									
pH		1	7.9	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.91		*	mg/L	0.01	0.05	12/12/13 23:40	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	650	H	*	mg/L	10	20	12/03/13 16:36	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1	149	H	*	mg/L	5	20	12/06/13 15:12	id
Sulfate	M300.0 - Ion Chromatography	10	302		*	mg/L	5	25	12/16/13 18:50	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59772

ACZ Sample ID: ***L15820-02***
Date Sampled: *11/24/13 12:40*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 15:48	mpb
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:06	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 13:16	bsu
Total Hot Plate Digestion	M200.2 ICP								12/11/13 10:34	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 9:22	pmc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59772

ACZ Sample ID: ***L15820-02***
Date Sampled: *11/24/13 12:40*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 22:54	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 20:49	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	12/12/13 5:24	pmc
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	12/14/13 0:30	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0394			mg/L	0.0002	0.001	12/12/13 5:24	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0380			mg/L	0.0002	0.001	12/14/13 0:30	pmc
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	12/04/13 22:54	jjc
Barium, total	M200.7 ICP	1	0.030			mg/L	0.003	0.02	12/11/13 20:49	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:24	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:30	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 22:54	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:36	jjc
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/04/13 22:54	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	12/11/13 20:49	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:24	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:30	pmc
Calcium, dissolved	M200.7 ICP	1	40			mg/L	0.2	1	12/04/13 22:54	jjc
Calcium, total	M200.7 ICP	1	39			mg/L	0.2	1	12/11/13 20:49	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/12/13 5:24	pmc
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/14/13 0:30	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	12/12/13 5:24	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/14/13 0:30	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:24	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:30	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:54	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:49	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 22:54	jjc
Iron, total	M200.7 ICP	1	0.07			mg/L	0.02	0.05	12/11/13 20:49	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:24	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:30	pmc
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	12/04/13 22:54	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/11/13 20:49	jjc
Magnesium, dissolved	M200.7 ICP	1	7.3			mg/L	0.2	1	12/04/13 22:54	jjc
Magnesium, total	M200.7 ICP	1	7.1			mg/L	0.2	1	12/11/13 20:49	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:24	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:30	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:38	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 14:52	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	12/12/13 5:24	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	12/14/13 0:30	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:24	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:30	pmc
Potassium, dissolved	M200.7 ICP	1	6.1			mg/L	0.3	2	12/04/13 22:54	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59772

ACZ Sample ID: ***L15820-02***
Date Sampled: *11/24/13 12:40*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.3	2	12/11/13 20:49	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:54	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:49	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0003	12/12/13 5:24	pmc
Selenium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0003	12/14/13 0:30	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:24	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:30	pmc
Sodium, dissolved	M200.7 ICP	1	26.5			mg/L	0.3	2	12/04/13 22:54	jjc
Sodium, total	M200.7 ICP	1	25.7			mg/L	0.3	2	12/11/13 20:49	jjc
Strontium, dissolved	M200.7 ICP	1	0.21		*	mg/L	0.01	0.05	12/04/13 22:54	jjc
Strontium, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	12/11/13 20:49	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:24	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:30	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 5:24	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 0:30	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 22:54	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 20:49	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	12/12/13 5:24	pmc
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	12/14/13 0:30	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0182			mg/L	0.0002	0.001	12/12/13 5:24	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0188			mg/L	0.0002	0.001	12/14/13 0:30	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 22:54	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 20:49	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59772

ACZ Sample ID: ***L15820-02***
Date Sampled: *11/24/13 12:40*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	130		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	130		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	10.4		*	mg/L	0.5	2.5	12/13/13 14:32	tcd
Conductivity @25C	SM2510B	1	364		*	umhos/cm	1	10	12/07/13 22:13	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:11	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:31	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.47	B	*	mg/L	0.1	0.5	12/13/13 14:32	tcd
Hardness as CaCO3	SM2340B - Calculation		130			mg/L	1	7	12/18/13 14:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.17		*	mg/L	0.02	0.1	12/12/13 23:10	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:30	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/12/13 23:41	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260	H	*	mg/L	10	20	12/03/13 16:37	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/06/13 15:14	id
Sulfate	M300.0 - Ion Chromatography	1	36.5		*	mg/L	0.5	2.5	12/13/13 14:32	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59760

ACZ Sample ID: ***L15820-03***
Date Sampled: *11/24/13 14:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 15:55	mpb
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:18	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 13:33	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 9:32	pmc
Total Hot Plate Digestion	M200.2 ICP								12/11/13 11:09	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59760

ACZ Sample ID: ***L15820-03***
Date Sampled: *11/24/13 14:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 22:58	jjc
Aluminum, total	M200.7 ICP	1	0.37			mg/L	0.03	0.2	12/11/13 20:59	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	12/12/13 5:33	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	12/14/13 0:34	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0285			mg/L	0.0002	0.001	12/12/13 5:33	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0275			mg/L	0.0002	0.001	12/14/13 0:34	pmc
Barium, dissolved	M200.7 ICP	1	0.059			mg/L	0.003	0.02	12/04/13 22:58	jjc
Barium, total	M200.7 ICP	1	0.061			mg/L	0.003	0.02	12/11/13 20:59	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:33	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:34	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 22:58	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:45	jjc
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/04/13 22:58	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	12/11/13 20:59	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:33	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:34	pmc
Calcium, dissolved	M200.7 ICP	1	40.5			mg/L	0.2	1	12/04/13 22:58	jjc
Calcium, total	M200.7 ICP	1	40			mg/L	0.2	1	12/11/13 20:59	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/12/13 5:33	pmc
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	12/14/13 0:34	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	12/12/13 5:33	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00031			mg/L	0.00005	0.0003	12/14/13 0:34	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0049			mg/L	0.0005	0.003	12/12/13 5:33	pmc
Copper, total	M200.8 ICP-MS	1	0.0050			mg/L	0.0005	0.003	12/14/13 0:34	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:58	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:59	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 22:58	jjc
Iron, total	M200.7 ICP	1	0.29			mg/L	0.02	0.05	12/11/13 20:59	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/12/13 5:33	pmc
Lead, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	12/14/13 0:34	pmc
Lithium, dissolved	M200.7 ICP	1	0.06	B		mg/L	0.02	0.1	12/04/13 22:58	jjc
Lithium, total	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	12/11/13 20:59	jjc
Magnesium, dissolved	M200.7 ICP	1	6.8			mg/L	0.2	1	12/04/13 22:58	jjc
Magnesium, total	M200.7 ICP	1	6.8			mg/L	0.2	1	12/11/13 20:59	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:33	pmc
Manganese, total	M200.8 ICP-MS	1	0.0114			mg/L	0.0005	0.003	12/14/13 0:34	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:43	las
Mercury, total	M1631, Atomic Fluorescence	2	0.7	B	*	ng/L	0.4	1	12/03/13 14:57	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	12/12/13 5:33	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	12/14/13 0:34	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:33	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:34	pmc
Potassium, dissolved	M200.7 ICP	1	7.6			mg/L	0.3	2	12/04/13 22:58	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59760

ACZ Sample ID: ***L15820-03***
Date Sampled: *11/24/13 14:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.5			mg/L	0.3	2	12/11/13 20:59	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 22:58	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 20:59	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	12/12/13 5:33	pmc
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	12/14/13 0:34	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:33	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:34	pmc
Sodium, dissolved	M200.7 ICP	1	26.8			mg/L	0.3	2	12/04/13 22:58	jjc
Sodium, total	M200.7 ICP	1	26			mg/L	0.3	2	12/11/13 20:59	jjc
Strontium, dissolved	M200.7 ICP	1	0.26		*	mg/L	0.01	0.05	12/04/13 22:58	jjc
Strontium, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	12/11/13 20:59	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:33	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:34	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	12/12/13 5:33	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 0:34	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 22:58	jjc
Titanium, total	M200.7 ICP	1	0.014	B		mg/L	0.005	0.03	12/11/13 20:59	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	12/12/13 5:33	pmc
Uranium, total	M200.8 ICP-MS	1	0.0031			mg/L	0.0001	0.0005	12/14/13 0:34	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0166			mg/L	0.0002	0.001	12/12/13 5:33	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0166			mg/L	0.0002	0.001	12/14/13 0:34	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 22:58	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 20:59	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59760

ACZ Sample ID: ***L15820-03***
Date Sampled: *11/24/13 14:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	144		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	144		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	9.00		*	mg/L	0.5	2.5	12/13/13 14:50	tcd
Conductivity @25C	SM2510B	1	367		*	umhos/cm	1	10	12/07/13 22:22	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:12	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:32	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.49	B	*	mg/L	0.1	0.5	12/13/13 14:50	tcd
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	1	7	12/18/13 14:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.81		*	mg/L	0.02	0.1	12/12/13 23:11	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:33	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/12/13 23:42	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270	H	*	mg/L	10	20	12/03/13 16:39	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1	11	BH	*	mg/L	5	20	12/06/13 15:17	id
Sulfate	M300.0 - Ion Chromatography	1	29.2		*	mg/L	0.5	2.5	12/13/13 14:50	tcd

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15820***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15822-01DUP	DUP	12/07/13 23:08			47	47	mg/L				0	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.977	mg/L	98.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.09	0.09			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0011		1.075	mg/L	107.4	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0011	.05	1.114	mg/L	106.3	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0011	.05	1.111	mg/L	106	85	115	0.27	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0011	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0011	U	1.039	mg/L	103.8	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02		.02066	mg/L	103.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				.00053	mg/L		-0.0012	0.0012			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01		.01061	mg/L	106.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01	.0007	.01083	mg/L	101.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01	.0007	.011	mg/L	103	70	130	1.56	20	

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ACZ Project ID: ***L15820***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02		.02048	mg/L	102.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0012	0.0012			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00088	0.00088			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01		.01138	mg/L	113.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.01	.0006	.01174	mg/L	111.4	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.01	.0006	.01175	mg/L	111.5	70	130	0.09	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0535	mg/L	107	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05022	mg/L	100.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0394	.09256	mg/L	106.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0394	.09388	mg/L	108.9	70	130	1.42	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05173	mg/L	103.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05208	mg/L	104.1	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0275	.07907	mg/L	103	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0275	.07949	mg/L	103.9	70	130	0.53	20	
WG356507													
WG356507ICV	ICV	12/16/13 20:05	MS131202-2	.05		.05291	mg/L	105.8	90	110			
WG356507ICB	ICB	12/16/13 20:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/16/13 20:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/16/13 20:14	MS131118-2	.05005		.05192	mg/L	103.7	85	115			
L15820-03LFM	LFM	12/16/13 20:22	MS131118-2	.05005	.0273	.07896	mg/L	103.2	70	130			
L15820-03LFMD	LFMD	12/16/13 20:24	MS131118-2	.05005	.0273	.07866	mg/L	102.6	70	130	0.38	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.957	mg/L	97.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				.0039	mg/L		-0.009	0.009			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.5	mg/L	100	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	.022	.5341	mg/L	102.4	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	.022	.532	mg/L	102	85	115	0.39	20	

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ACZ Project ID: ***L15820***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.03	.5282	mg/L	99.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.03	.5232	mg/L	98.6	70	130	0.95	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0499	mg/L	99.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05305	mg/L	105.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05156	mg/L	102.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.0506	mg/L	101	70	130	1.88	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04627	mg/L	92.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.04822	mg/L	96.2	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	U	.04577	mg/L	91.4	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	U	.04679	mg/L	93.4	70	130	2.2	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.008	mg/L	100.4	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.12	0.12			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1		1.075	mg/L	107.5	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1	U	1.111	mg/L	111.1	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1	U	1.099	mg/L	109.9	85	115	1.09	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15820-02LFM	LFM	12/12/13 16:39	II131209-3	1	U	1.109	mg/L	110.9	70	130			
L15820-02LFMD	LFMD	12/12/13 16:42	II131209-3	1	U	1.077	mg/L	107.7	70	130	2.93	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.019	mg/L	101	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5005		.526	mg/L	105.1	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5005	.37	.899	mg/L	105.7	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5005	.37	.887	mg/L	103.3	85	115	1.34	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5005	.08	.586	mg/L	101.1	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5005	.08	.582	mg/L	100.3	70	130	0.68	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05087	mg/L	101.7	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05303	mg/L	105.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.05348	mg/L	106.7	70	130	0.84	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04928	mg/L	98.6	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05085	mg/L	101.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	U	.05074	mg/L	101.3	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	U	.0508	mg/L	101.4	70	130	0.12	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		98.42	mg/L	98.4	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.6	0.6			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	68.00225		71.15	mg/L	104.6	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	68.00225	51.7	121.4	mg/L	102.5	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	68.00225	51.7	121.9	mg/L	103.2	85	115	0.41	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	68.00225	39	110.8	mg/L	105.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	68.00225	39	108.1	mg/L	101.6	70	130	2.47	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15737-01DUP	DUP	12/13/13 11:50			38.4	38.3	mg/L				0.3	20	
L15737-02AS	AS	12/13/13 12:26	WI131011-1	30	14.6	46.5	mg/L	106.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05131	mg/L	102.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0008	.04931	mg/L	96.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0008	.05001	mg/L	98.3	70	130	1.41	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0489	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05037	mg/L	100.6	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.001	.05044	mg/L	98.8	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.001	.05001	mg/L	97.9	70	130	0.86	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0503	mg/L	100.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05251	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.00012	.05116	mg/L	102	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.00012	.05138	mg/L	102.4	70	130	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05114	mg/L	102.2	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.00031	.05044	mg/L	100.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.00031	.04966	mg/L	98.6	70	130	1.56	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	µmhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	µmhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	µmhos/cm	99.3	90	110			
L15822-01DUP	DUP	12/07/13 23:08			1970	1959	µmhos/cm				0.6	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	µmhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	µmhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04971	mg/L	99.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04783	mg/L	95.6	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04807	mg/L	96	70	130	0.5	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05122	mg/L	102.3	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.005	.05465	mg/L	99.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.005	.05389	mg/L	97.7	70	130	1.4	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356074													
WG356038LRB	LRB	12/07/13 1:49				U	mg/L		-0.003	0.003			
WG356038LFB	LFB	12/07/13 1:50	WI131202-2	.2		.2005	mg/L	100.3	90	110			
L15768-03DUP	DUP	12/07/13 2:04			U	U	mg/L				0	20	RA
L15777-01LFM	LFM	12/07/13 2:06	WI131202-2	.2	U	.2018	mg/L	100.9	90	110			

SPF Water Engineering

ACZ Project ID: ***L15820***

Cyanide, WAD — SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356008LRB	LRB	12/07/13 1:15				U	mg/L		-0.003	0.003			
WG356008LFB	LFB	12/07/13 1:16	WI131202-4	.2		.2011	mg/L	100.6	90	110			
L15820-01DUP	DUP	12/07/13 1:30			U	U	mg/L				0	20	RA
L15820-02LFM	LFM	12/07/13 1:31	WI131202-4	.2	U	.1912	mg/L	95.6	90	110			

Fluoride — M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15737-01DUP	DUP	12/13/13 11:50			1.43	1.41	mg/L				1.4	20	
L15737-02AS	AS	12/13/13 12:26	WI131011-1	1.5	2.65	4.18	mg/L	102	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			

Gallium, dissolved — M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.3	0.3			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.001		1.05	mg/L	104.9	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.001	U	1.11	mg/L	110.9	85	115	2.74	20	

Gallium, total — M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.001	U	1.04	mg/L	103.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.001	U	1.01	mg/L	100.9	70	130	2.93	20	

Iron, dissolved — M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.012	mg/L	100.6	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.06	0.06			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0014		1.039	mg/L	103.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0014	.06	1.085	mg/L	102.4	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0014	.06	1.073	mg/L	101.2	85	115	1.11	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0014	.07	1.041	mg/L	97	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0014	.07	1.019	mg/L	94.8	70	130	2.14	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0512	mg/L	102.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05199	mg/L	103.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05156	mg/L	103	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05206	mg/L	104	70	130	0.97	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05071	mg/L	101.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05092	mg/L	101.7	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0004	.05135	mg/L	101.8	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0004	.05094	mg/L	101	70	130	0.8	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.943	mg/L	97.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.06	0.06			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1		.98	mg/L	98	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1	.07	1.078	mg/L	100.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1	.07	1.073	mg/L	100.3	85	115	0.46	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1	.04	1.017	mg/L	97.7	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1	.04	1.009	mg/L	96.9	70	130	0.79	20	

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ACZ Project ID: ***L15820***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		96.99	mg/L	97	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.6	0.6			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	49.99695		50.11	mg/L	100.2	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	49.99695	50.9	100.2	mg/L	98.6	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	49.99695	50.9	100.2	mg/L	98.6	85	115	0	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	49.99695	7.1	56.76	mg/L	99.3	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	49.99695	7.1	55.64	mg/L	97.1	70	130	1.99	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0518	mg/L	103.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05248	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05127	mg/L	102.4	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05152	mg/L	102.9	70	130	0.49	20	
WG356386													
WG356386ICV	ICV	12/13/13 1:05	MS131202-2	.05		.05091	mg/L	101.8	90	110			
WG356386ICB	ICB	12/13/13 1:08				U	mg/L		-0.0015	0.0015			
WG356386LFB	LFB	12/13/13 1:12	MS131118-2	.05005		.05276	mg/L	105.4	85	115			
L15866-01AS	AS	12/13/13 1:21	MS131118-2	.05005	.2429	.2913	mg/L	96.7	70	130			
L15866-01ASD	ASD	12/13/13 1:24	MS131118-2	.05005	.2429	.2933	mg/L	100.7	70	130	0.68	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05007	mg/L	100.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05081	mg/L	101.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0114	.06173	mg/L	100.6	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0114	.06117	mg/L	99.4	70	130	0.91	20	
WG356507													
WG356507ICV	ICV	12/16/13 20:05	MS131202-2	.05		.05109	mg/L	102.2	90	110			
WG356507ICB	ICB	12/16/13 20:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/16/13 20:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/16/13 20:14	MS131118-2	.05005		.05189	mg/L	103.7	85	115			
L15820-03LFM	LFM	12/16/13 20:22	MS131118-2	.05005	.012	.06226	mg/L	100.4	70	130			
L15820-03LFMD	LFMD	12/16/13 20:24	MS131118-2	.05005	.012	.06091	mg/L	97.7	70	130	2.19	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15770-03MS	MS	12/06/13 10:48	HG131206-6	2	U	2.02	ng/L	101	71	125			
L15770-03MSD	MSD	12/06/13 10:53	HG131206-6	2	U	2.06	ng/L	103	71	125	1.96	24	
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
L15823-02MS	MS	12/06/13 12:34	HG131206-6	2	U	2.1	ng/L	105	71	125			
L15823-02MSD	MSD	12/06/13 12:39	HG131206-6	2	U	2.18	ng/L	109	71	125	3.74	24	
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L15820***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
L15826-02MS	MS	12/03/13 15:38	HG131010-5	2	U	2.05	ng/L	102.5	71	125			
L15826-02MSD	MSD	12/03/13 15:43	HG131010-5	2	U	1.92	ng/L	96	71	125	6.55	24	
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05026	mg/L	100.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0039	.05475	mg/L	101.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0039	.05507	mg/L	102.3	70	130	0.58	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02006		.01886	mg/L	94	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05088	mg/L	101.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05	.003	.05479	mg/L	103.6	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05	.003	.05403	mg/L	102.1	70	130	1.4	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05014	mg/L	100.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0018	0.0018			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05069	mg/L	101.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04728	mg/L	94.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04743	mg/L	94.8	70	130	0.32	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04891	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0018	0.0018			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00132	0.00132			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04961	mg/L	99.1	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.04859	mg/L	97.1	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.04813	mg/L	96.2	70	130	0.95	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15778-01AS	AS	12/12/13 23:05	WI130816-3	2	.81	2.834	mg/L	101.2	90	110			
L15778-02DUP	DUP	12/12/13 23:08			.83	.809	mg/L				2.6	20	
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356350													
WG356350LFB1	LFB	12/12/13 13:58	WI121218-3	1		.982	mg/L	98.2	90	110			
L15773-01AS	AS	12/12/13 14:15	WI121218-3	1	U	.984	mg/L	98.4	90	110			
L15773-02DUP	DUP	12/12/13 14:17			U	U	mg/L				0	20	RA
WG356350LFB2	LFB	12/12/13 14:29	WI121218-3	1		1.008	mg/L	100.8	90	110			
L15820-02AS	AS	12/12/13 14:31	WI121218-3	1	U	1.003	mg/L	100.3	90	110			
L15820-03DUP	DUP	12/12/13 14:34			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15822-01DUP	DUP	12/07/13 23:08			6.7	6.77	units				1	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

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ACZ Project ID: ***L15820***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356390													
WG356321LRB	LRB	12/12/13 23:24				U	mg/L		-0.03	0.03			
WG356321LFB	LFB	12/12/13 23:25	WI131206-2	.5		.491	mg/L	98.2	90	110			
L15754-01LFM	LFM	12/12/13 23:28	WI131206-2	.5	.05	.536	mg/L	97.2	90	110			
L15754-02DUP	DUP	12/12/13 23:30			.13	.12	mg/L				8	20	
L15820-03LFM	LFM	12/12/13 23:43	WI131206-2	.5	.02	.524	mg/L	100.8	90	110			
L15821-01DUP	DUP	12/12/13 23:46			.02	.015	mg/L				28.6	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	20		19.64	mg/L	98.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.9	0.9			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	99.94539		102.7	mg/L	102.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	99.94539	16.3	120	mg/L	103.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	99.94539	16.3	120.3	mg/L	104.1	85	115	0.25	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	99.94539	6	106.3	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	99.94539	6	105	mg/L	99.1	70	130	1.23	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355807													
WG355807PBW	PBW	12/03/13 16:30				U	mg/L		-20	20			
WG355807LCSW	LCSW	12/03/13 16:31	PCN44257	260		232	mg/L	89.2	80	120			
L15825-03DUP	DUP	12/03/13 16:49			190	188	mg/L				1.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356049													
WG356049PBW	PBW	12/06/13 15:07				U	mg/L		-15	15			
WG356049LCSW	LCSW	12/06/13 15:09	PCN44260	160		149	mg/L	93.1	80	120			
L15845-03DUP	DUP	12/06/13 15:38			309	319	mg/L				3.2	10	

SPF Water Engineering

ACZ Project ID: ***L15820***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.3	0.3			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0009		1.07	mg/L	106.9	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0009	U	1.11	mg/L	110.9	85	115	3.67	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0009	U	1.05	mg/L	104.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0514	mg/L	102.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05282	mg/L	105.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0028	.05978	mg/L	113.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0028	.06016	mg/L	114.6	70	130	0.63	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05106	mg/L	102.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.0523	mg/L	104.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0019	.05296	mg/L	102	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0019	.05271	mg/L	101.5	70	130	0.47	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02002		.01987	mg/L	99.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01001		.009618	mg/L	96.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01001	U	.009139	mg/L	91.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01001	U	.009245	mg/L	92.4	70	130	1.15	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02002		.01936	mg/L	96.7	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01001		.009648	mg/L	96.4	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.01001	U	.009378	mg/L	93.7	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.01001	U	.009334	mg/L	93.2	70	130	0.47	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		98.9	mg/L	98.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.9	0.9			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	100.0204		102.4	mg/L	102.4	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	100.0204	83.2	183	mg/L	99.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	100.0204	83.2	183.1	mg/L	99.9	85	115	0.05	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	100.0204	25.7	126.1	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	100.0204	25.7	124.4	mg/L	98.7	70	130	1.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.003	mg/L	100.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.511	mg/L	102.2	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	2.03	2.44	mg/L	82	85	115			M3
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	2.03	2.439	mg/L	81.8	85	115	0.04	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.2	.696	mg/L	99.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.2	.685	mg/L	97	70	130	1.59	20	

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ACZ Project ID: ***L15820***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15737-01DUP	DUP	12/13/13 11:50			10.2	10.2	mg/L				0	20	
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			
L15737-02AS	AS	12/16/13 18:32	WI131011-1	60	84.6	145	mg/L	100.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05247	mg/L	104.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05422	mg/L	108.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05404	mg/L	108	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05399	mg/L	107.9	70	130	0.09	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05207	mg/L	104.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05049	mg/L	100.9	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.05155	mg/L	103	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.05101	mg/L	101.9	70	130	1.05	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05015		.05309	mg/L	105.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				.0002	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.04925	mg/L	98.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04992	mg/L	99.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04897	mg/L	97.8	70	130	1.92	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05015		.0508	mg/L	101.3	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04893	mg/L	97.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.04815	mg/L	96.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.04875	mg/L	97.4	70	130	1.24	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.9692	mg/L	98.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.015	0.015			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.999		1.026	mg/L	102.7	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.999	U	1.06	mg/L	106.1	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.999	U	1.056	mg/L	105.7	85	115	0.38	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.999	U	1.011	mg/L	101.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.999	U	.996	mg/L	99.7	70	130	1.49	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0521	mg/L	104.2	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05371	mg/L	107.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0018	.05542	mg/L	107.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0018	.05547	mg/L	107.3	70	130	0.09	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0509	mg/L	101.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05228	mg/L	104.6	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05	.0031	.05723	mg/L	108.3	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05	.0031	.05692	mg/L	107.6	70	130	0.54	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04956	mg/L	99.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05273	mg/L	105.2	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	.0182	.06954	mg/L	102.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	.0182	.07041	mg/L	104.2	70	130	1.24	20	

SPF Water Engineering

ACZ Project ID: ***L15820***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05254	mg/L	104.9	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	.0166	.06929	mg/L	105.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	.0166	.0684	mg/L	103.4	70	130	1.29	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.917	mg/L	95.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.509	mg/L	101.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	.07	.533	mg/L	94.6	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	.07	.531	mg/L	94.2	85	115	0.38	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	U	.502	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	U	.494	mg/L	98.8	70	130	1.61	20	

SPF Water Engineering ACZ Project ID: ***L15820***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15820-01	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L15820***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15820-02	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L15820***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15820-03	WG355755	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15820
Date Received: 12/02/2013 10:08
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15820-01 : Mercury containers were single bagged.

L15820-02 : Mercury containers were single bagged.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3669	6.5	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15820
Date Received:	12/02/2013 10:08
Received By:	mtb
Date Printed:	12/2/2013

L15820

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2014-GW							
59766	11/24/13 11:35	GW	8	X							
59772	11/24/13 12:40	GW	8	X							
59760	11/24/13 14:10	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	11-24-13 19:30		
		MC 12-2-13 10:08	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15820 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 18, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15821

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15821. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15821. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 17, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

December 18, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15821

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15821. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15821. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

Additionally, the Alkalinity results for L15821 have been qualified with the H1 flag on the extended qualifier report. The chemist noted that these samples were analyzed as quickly as possible after the Thanksgiving holiday, but the EPA recommended hold time was still not met.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L15821-01***
Date Sampled: *11/22/13 09:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 13:21	mla
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:12	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 14:08	bsu
Total Hot Plate Digestion	M200.2 ICP								12/11/13 11:21	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:01	pmc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L15821-01***
Date Sampled: *11/22/13 09:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 23:01	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:02	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:36	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/14/13 0:49	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0072			mg/L	0.0002	0.001	12/12/13 5:36	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0079			mg/L	0.0002	0.001	12/14/13 0:49	pmc
Barium, dissolved	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	12/04/13 23:01	jjc
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	12/11/13 21:02	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:36	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:49	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 23:01	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:48	jjc
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/04/13 23:01	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/11/13 21:02	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:36	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:49	pmc
Calcium, dissolved	M200.7 ICP	1	47			mg/L	0.2	1	12/04/13 23:01	jjc
Calcium, total	M200.7 ICP	1	46.6			mg/L	0.2	1	12/11/13 21:02	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	12/12/13 5:36	pmc
Chromium, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	12/14/13 0:49	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00046			mg/L	0.00005	0.0003	12/12/13 5:36	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/14/13 0:49	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:36	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:49	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:01	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:02	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 23:01	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:02	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:36	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:49	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/04/13 23:01	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:02	jjc
Magnesium, dissolved	M200.7 ICP	1	10.1			mg/L	0.2	1	12/04/13 23:01	jjc
Magnesium, total	M200.7 ICP	1	10			mg/L	0.2	1	12/11/13 21:02	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	12/12/13 5:36	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:49	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:48	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 13:10	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	12/12/13 5:36	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	12/14/13 0:49	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:36	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:49	pmc
Potassium, dissolved	M200.7 ICP	1	5.1			mg/L	0.3	2	12/04/13 23:01	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L15821-01***
Date Sampled: *11/22/13 09:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.1			mg/L	0.3	2	12/11/13 21:02	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:01	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:02	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	12/12/13 5:36	pmc
Selenium, total	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	12/14/13 0:49	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:36	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:49	pmc
Sodium, dissolved	M200.7 ICP	1	20.5			mg/L	0.3	2	12/04/13 23:01	jjc
Sodium, total	M200.7 ICP	1	20.3			mg/L	0.3	2	12/11/13 21:02	jjc
Strontium, dissolved	M200.7 ICP	1	0.21		*	mg/L	0.01	0.05	12/04/13 23:01	jjc
Strontium, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	12/11/13 21:02	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:36	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:49	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	12/12/13 5:36	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 0:49	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 23:01	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:02	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0005	12/12/13 5:36	pmc
Uranium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	12/14/13 0:49	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0205			mg/L	0.0002	0.001	12/12/13 5:36	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0211			mg/L	0.0002	0.001	12/14/13 0:49	pmc
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/04/13 23:01	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/11/13 21:02	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L15821-01***
Date Sampled: *11/22/13 09:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	157	H	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	157	H	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	10.6		*	mg/L	0.5	2.5	12/13/13 15:08	tcd
Conductivity @25C	SM2510B	1	389		*	umhos/cm	1	10	12/07/13 22:31	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:18	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:37	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.36	B	*	mg/L	0.1	0.5	12/13/13 15:08	tcd
Hardness as CaCO3	SM2340B - Calculation		159			mg/L	1	7	12/18/13 14:39	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	3.09		*	mg/L	0.02	0.1	12/12/13 23:12	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:37	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	22		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/12/13 23:45	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270	H	*	mg/L	10	20	12/10/13 12:39	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:38	id
Sulfate	M300.0 - Ion Chromatography	1	17.9		*	mg/L	0.5	2.5	12/13/13 15:08	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH DUPLICATE

ACZ Sample ID: ***L15821-02***
Date Sampled: *11/22/13 09:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 13:31	mla
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:12	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 14:43	bsu
Total Hot Plate Digestion	M200.2 ICP								12/11/13 11:32	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:10	pmc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH DUPLICATE

ACZ Sample ID: ***L15821-02***
Date Sampled: *11/22/13 09:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 23:04	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:05	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:40	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/14/13 0:53	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0072			mg/L	0.0002	0.001	12/12/13 5:40	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0077			mg/L	0.0002	0.001	12/14/13 0:53	pmc
Barium, dissolved	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	12/04/13 23:04	jjc
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	12/11/13 21:05	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:40	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:53	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 23:04	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:51	jjc
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/04/13 23:04	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/11/13 21:05	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:40	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:53	pmc
Calcium, dissolved	M200.7 ICP	1	46.6			mg/L	0.2	1	12/04/13 23:04	jjc
Calcium, total	M200.7 ICP	1	45.9			mg/L	0.2	1	12/11/13 21:05	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	12/12/13 5:40	pmc
Chromium, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	12/14/13 0:53	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	12/12/13 5:40	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/14/13 0:53	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:40	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:53	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:04	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:05	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 23:04	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:05	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:40	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:53	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/04/13 23:04	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:05	jjc
Magnesium, dissolved	M200.7 ICP	1	10.1			mg/L	0.2	1	12/04/13 23:04	jjc
Magnesium, total	M200.7 ICP	1	9.9			mg/L	0.2	1	12/11/13 21:05	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:40	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:53	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:54	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 13:15	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	12/12/13 5:40	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	12/14/13 0:53	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:40	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:53	pmc
Potassium, dissolved	M200.7 ICP	1	5			mg/L	0.3	2	12/04/13 23:04	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH DUPLICATE

ACZ Sample ID: ***L15821-02***
Date Sampled: *11/22/13 09:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5			mg/L	0.3	2	12/11/13 21:05	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:04	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:05	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	12/12/13 5:40	pmc
Selenium, total	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	12/14/13 0:53	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:40	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:53	pmc
Sodium, dissolved	M200.7 ICP	1	20.4			mg/L	0.3	2	12/04/13 23:04	jjc
Sodium, total	M200.7 ICP	1	20			mg/L	0.3	2	12/11/13 21:05	jjc
Strontium, dissolved	M200.7 ICP	1	0.21		*	mg/L	0.01	0.05	12/04/13 23:04	jjc
Strontium, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	12/11/13 21:05	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:40	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:53	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	12/12/13 5:40	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 0:53	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/04/13 23:04	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:05	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0005	12/12/13 5:40	pmc
Uranium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	12/14/13 0:53	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0202			mg/L	0.0002	0.001	12/12/13 5:40	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0209			mg/L	0.0002	0.001	12/14/13 0:53	pmc
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/04/13 23:04	jjc
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/11/13 21:05	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: SAGEBRUSH DUPLICATE

ACZ Sample ID: ***L15821-02***
Date Sampled: *11/22/13 09:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	158	H	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	158	H	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	10.6		*	mg/L	0.5	2.5	12/13/13 15:25	tcd
Conductivity @25C	SM2510B	1	385		*	umhos/cm	1	10	12/07/13 22:40	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:19	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:38	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.36	B	*	mg/L	0.1	0.5	12/13/13 15:25	tcd
Hardness as CaCO3	SM2340B - Calculation		158			mg/L	1	7	12/18/13 14:39	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	3.08		*	mg/L	0.02	0.1	12/12/13 23:14	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:38	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	12/12/13 23:47	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270	H	*	mg/L	10	20	12/10/13 12:43	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:40	id
Sulfate	M300.0 - Ion Chromatography	1	18.0		*	mg/L	0.5	2.5	12/13/13 15:25	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L15821-03***
Date Sampled: *11/22/13 09:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 13:40	mla
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:12	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:00	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:20	pmc
Total Hot Plate Digestion	M200.2 ICP								12/11/13 11:44	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L15821-03***
Date Sampled: *11/22/13 09:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 23:07	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:08	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:49	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/14/13 0:56	pmc
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/12/13 5:49	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0002	0.001	12/14/13 0:56	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	12/04/13 23:07	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	12/11/13 21:08	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:49	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:56	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/04/13 23:07	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 16:54	jjc
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/04/13 23:07	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:08	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:49	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:56	pmc
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/04/13 23:07	jjc
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/11/13 21:08	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 5:49	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/14/13 0:56	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:49	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:56	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:49	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:56	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:07	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:08	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/04/13 23:07	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:08	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:49	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:56	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	12/04/13 23:07	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:08	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/04/13 23:07	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/11/13 21:08	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:49	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:56	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 11:59	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 13:20	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:49	pmc
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:56	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:49	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:56	pmc
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.3	2	12/04/13 23:07	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L15821-03***
Date Sampled: *11/22/13 09:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	U		mg/L	0.3	2	12/11/13 21:08	jjc
Scandium, dissolved	M200.7 ICP	1	U	*	mg/L	0.1	0.5	12/04/13 23:07	jjc
Scandium, total	M200.7 ICP	1	U	*	mg/L	0.1	0.5	12/11/13 21:08	jjc
Selenium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0003	12/12/13 5:49	pmc
Selenium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0003	12/14/13 0:56	pmc
Silver, dissolved	M200.8 ICP-MS	1	U		mg/L	0.00005	0.0003	12/12/13 5:49	pmc
Silver, total	M200.8 ICP-MS	1	U		mg/L	0.00005	0.0003	12/14/13 0:56	pmc
Sodium, dissolved	M200.7 ICP	1	U		mg/L	0.3	2	12/04/13 23:07	jjc
Sodium, total	M200.7 ICP	1	U		mg/L	0.3	2	12/11/13 21:08	jjc
Strontium, dissolved	M200.7 ICP	1	U	*	mg/L	0.01	0.05	12/04/13 23:07	jjc
Strontium, total	M200.7 ICP	1	U		mg/L	0.01	0.05	12/11/13 21:08	jjc
Thallium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	12/12/13 5:49	pmc
Thallium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	12/14/13 0:56	pmc
Tin, dissolved	M200.8 ICP-MS	1	U	*	mg/L	0.0001	0.0005	12/12/13 5:49	pmc
Tin, total	M200.8 ICP-MS	1	U	*	mg/L	0.0001	0.0005	12/14/13 0:56	pmc
Titanium, dissolved	M200.7 ICP	1	U		mg/L	0.005	0.03	12/04/13 23:07	jjc
Titanium, total	M200.7 ICP	1	U		mg/L	0.005	0.03	12/11/13 21:08	jjc
Uranium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	12/12/13 5:49	pmc
Uranium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	12/14/13 0:56	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0002	0.001	12/12/13 5:49	pmc
Vanadium, total	M200.8 ICP-MS	1	U		mg/L	0.0002	0.001	12/14/13 0:56	pmc
Zinc, dissolved	M200.7 ICP	1	U		mg/L	0.01	0.05	12/04/13 23:07	jjc
Zinc, total	M200.7 ICP	1	U		mg/L	0.01	0.05	12/11/13 21:08	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L15821-03***
Date Sampled: *11/22/13 09:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	12/13/13 15:43	tcd
Conductivity @25C	SM2510B	1	1	B	*	umhos/cm	1	10	12/07/13 22:45	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:20	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:39	pjb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	12/13/13 15:43	tcd
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	1	7	12/18/13 14:39	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:17	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:39	tcd
pH (lab)	SM4500H+ B									
pH		1	6.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	12/12/13 23:48	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		UH	*	mg/L	10	20	12/10/13 12:47	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:43	id
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	12/13/13 15:43	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L15821-04***
Date Sampled: *11/22/13 09:45*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 13:50	mla
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:12	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:18	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:29	pmc
Total Hot Plate Digestion	M200.2 ICP								12/11/13 11:56	jjc

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:17	jjc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/14/13 0:59	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	12/14/13 0:59	pmc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	12/11/13 21:17	jjc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:59	pmc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:03	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:17	jjc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:59	pmc
Calcium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/11/13 21:17	jjc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/14/13 0:59	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:59	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:59	pmc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:17	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:17	jjc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:59	pmc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:17	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	12/11/13 21:17	jjc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:59	pmc
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 13:25	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 0:59	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 0:59	pmc
Potassium, total	M200.7 ICP	1		U		mg/L	0.3	2	12/11/13 21:17	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:17	jjc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/14/13 0:59	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 0:59	pmc
Sodium, total	M200.7 ICP	1		U		mg/L	0.3	2	12/11/13 21:17	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:17	jjc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:59	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 0:59	pmc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:17	jjc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 0:59	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/14/13 0:59	pmc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:17	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L15821-04***
Date Sampled: *11/22/13 09:45*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	12/13/13 16:19	tcd
Conductivity @25C	SM2510B	1		U	*	umhos/cm	1	10	12/07/13 22:51	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:21	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:40	pjb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	12/13/13 16:19	tcd
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:40	tcd
pH (lab)	SM4500H+ B									
pH		1	6	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	12/12/13 23:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		UH	*	mg/L	10	20	12/07/13 13:50	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:46	id
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	12/13/13 16:19	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TB111313-1

ACZ Sample ID: ***L15821-05***
Date Sampled: *11/22/13 00:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/04/13 14:00	mla
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:13	tcd

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/04/13 19:22	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:42	pjb

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15821***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15822-01DUP	DUP	12/07/13 23:08			47	47	mg/L				0	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.977	mg/L	98.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.09	0.09			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0011		1.075	mg/L	107.4	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0011	.05	1.114	mg/L	106.3	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0011	.05	1.111	mg/L	106	85	115	0.27	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0011	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0011	U	1.039	mg/L	103.8	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02		.02066	mg/L	103.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				.00053	mg/L		-0.0012	0.0012			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01		.01061	mg/L	106.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01	.0007	.01083	mg/L	101.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01	.0007	.011	mg/L	103	70	130	1.56	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02		.02048	mg/L	102.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0012	0.0012			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00088	0.00088			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01		.01138	mg/L	113.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.01	.0006	.01174	mg/L	111.4	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.01	.0006	.01175	mg/L	111.5	70	130	0.09	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0535	mg/L	107	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05022	mg/L	100.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0394	.09256	mg/L	106.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0394	.09388	mg/L	108.9	70	130	1.42	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05173	mg/L	103.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05208	mg/L	104.1	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0275	.07907	mg/L	103	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0275	.07949	mg/L	103.9	70	130	0.53	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.957	mg/L	97.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				.0039	mg/L		-0.009	0.009			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.5	mg/L	100	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	.022	.5341	mg/L	102.4	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	.022	.532	mg/L	102	85	115	0.39	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.03	.5282	mg/L	99.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.03	.5232	mg/L	98.6	70	130	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0499	mg/L	99.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05305	mg/L	105.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05156	mg/L	102.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.0506	mg/L	101	70	130	1.88	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04627	mg/L	92.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.04822	mg/L	96.2	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	U	.04577	mg/L	91.4	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	U	.04679	mg/L	93.4	70	130	2.2	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.008	mg/L	100.4	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.12	0.12			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1		1.075	mg/L	107.5	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1	U	1.111	mg/L	111.1	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1	U	1.099	mg/L	109.9	85	115	1.09	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15820-02LFM	LFM	12/12/13 16:39	II131209-3	1	U	1.109	mg/L	110.9	70	130			
L15820-02LFMD	LFMD	12/12/13 16:42	II131209-3	1	U	1.077	mg/L	107.7	70	130	2.93	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.019	mg/L	101	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5005		.526	mg/L	105.1	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5005	.37	.899	mg/L	105.7	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5005	.37	.887	mg/L	103.3	85	115	1.34	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5005	.08	.586	mg/L	101.1	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5005	.08	.582	mg/L	100.3	70	130	0.68	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05087	mg/L	101.7	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05303	mg/L	105.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.05348	mg/L	106.7	70	130	0.84	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04928	mg/L	98.6	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05085	mg/L	101.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	U	.05074	mg/L	101.3	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	U	.0508	mg/L	101.4	70	130	0.12	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		98.42	mg/L	98.4	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.6	0.6			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	68.00225		71.15	mg/L	104.6	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	68.00225	51.7	121.4	mg/L	102.5	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	68.00225	51.7	121.9	mg/L	103.2	85	115	0.41	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	68.00225	39	110.8	mg/L	105.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	68.00225	39	108.1	mg/L	101.6	70	130	2.47	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15737-01DUP	DUP	12/13/13 11:50			38.4	38.3	mg/L				0.3	20	
L15737-02AS	AS	12/13/13 12:26	WI131011-1	30	14.6	46.5	mg/L	106.3	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.8	mg/L	109.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05131	mg/L	102.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0008	.04931	mg/L	96.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0008	.05001	mg/L	98.3	70	130	1.41	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0489	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05037	mg/L	100.6	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.001	.05044	mg/L	98.8	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.001	.05001	mg/L	97.9	70	130	0.86	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0503	mg/L	100.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05251	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.00012	.05116	mg/L	102	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.00012	.05138	mg/L	102.4	70	130	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05114	mg/L	102.2	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.00031	.05044	mg/L	100.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.00031	.04966	mg/L	98.6	70	130	1.56	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
L15822-01DUP	DUP	12/07/13 23:08			1970	1959	umhos/cm				0.6	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04971	mg/L	99.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04783	mg/L	95.6	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04807	mg/L	96	70	130	0.5	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05122	mg/L	102.3	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.005	.05465	mg/L	99.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.005	.05389	mg/L	97.7	70	130	1.4	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355888													
WG355888ICV	ICV	12/04/13 17:12	WI131202-6	.3		.2922	mg/L	97.4	90	110			
WG355888ICB	ICB	12/04/13 17:13				U	mg/L		-0.003	0.003			
WG355900													
WG355836LRB	LRB	12/04/13 18:57				U	mg/L		-0.003	0.003			
WG355836LFB	LFB	12/04/13 18:58	WI131202-2	.2		.1849	mg/L	92.5	90	110			
L15818-01DUP	DUP	12/04/13 19:12			U	U	mg/L				0	20	RA
L15818-03LFM	LFM	12/04/13 19:14	WI131202-2	.2	U	.1801	mg/L	90.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L15821***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG356070													
WG355973LRB	LRB	12/06/13 23:26				U	mg/L		-0.003	0.003			
WG355973LFB	LFB	12/06/13 23:26	WI131202-4	.2		.1879	mg/L	94	90	110			
L15731-01DUP	DUP	12/06/13 23:28			U	U	mg/L				0	20	RA
L15731-02LFM	LFM	12/06/13 23:30	WI131202-4	.2	U	.1711	mg/L	85.6	90	110			M2
L15821-04DUP	DUP	12/06/13 23:41			U	U	mg/L				0	20	RA
L15821-05LFM	LFM	12/06/13 23:42	WI131202-4	.2	U	.1881	mg/L	94.1	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15737-01DUP	DUP	12/13/13 11:50			1.43	1.41	mg/L				1.4	20	
L15737-02AS	AS	12/13/13 12:26	WI131011-1	1.5	2.65	4.18	mg/L	102	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	1.5	U	1.66	mg/L	110.7	90	110			M1
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.3	0.3			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.001		1.05	mg/L	104.9	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.001	U	1.11	mg/L	110.9	85	115	2.74	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.001	U	1.04	mg/L	103.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.001	U	1.01	mg/L	100.9	70	130	2.93	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.012	mg/L	100.6	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.06	0.06			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0014		1.039	mg/L	103.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0014	.06	1.085	mg/L	102.4	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0014	.06	1.073	mg/L	101.2	85	115	1.11	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0014	.07	1.041	mg/L	97	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0014	.07	1.019	mg/L	94.8	70	130	2.14	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0512	mg/L	102.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05199	mg/L	103.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05156	mg/L	103	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05206	mg/L	104	70	130	0.97	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05071	mg/L	101.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05092	mg/L	101.7	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0004	.05135	mg/L	101.8	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0004	.05094	mg/L	101	70	130	0.8	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.943	mg/L	97.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.06	0.06			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1		.98	mg/L	98	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1	.07	1.078	mg/L	100.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1	.07	1.073	mg/L	100.3	85	115	0.46	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1	.04	1.017	mg/L	97.7	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1	.04	1.009	mg/L	96.9	70	130	0.79	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		96.99	mg/L	97	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.6	0.6			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	49.99695		50.11	mg/L	100.2	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	49.99695	50.9	100.2	mg/L	98.6	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	49.99695	50.9	100.2	mg/L	98.6	85	115	0	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	49.99695	7.1	56.76	mg/L	99.3	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	49.99695	7.1	55.64	mg/L	97.1	70	130	1.99	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0518	mg/L	103.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05248	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05127	mg/L	102.4	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05152	mg/L	102.9	70	130	0.49	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05007	mg/L	100.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05081	mg/L	101.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0114	.06173	mg/L	100.6	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0114	.06117	mg/L	99.4	70	130	0.91	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
L15823-02MS	MS	12/06/13 12:34	HG131206-6	2	U	2.1	ng/L	105	71	125			
L15823-02MSD	MSD	12/06/13 12:39	HG131206-6	2	U	2.18	ng/L	109	71	125	3.74	24	
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356150													
WG356150CCV1	CCV	12/10/13 11:39	HG131206-4	10		11.2	ng/L	112	76.5	123.4			
WG356150CCB1	CCB	12/10/13 11:45				U	ng/L		-0.5	0.5			
WG356150PQV	PQV	12/10/13 11:50	HG131206-5	.5		.51	ng/L	102	70	130			
WG356150LFB	LFB	12/10/13 11:55	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15822-01MS	MS	12/10/13 13:35	HG5XPREP	50	4	14.5	ng/L	105	71	125			
L15822-01MSD	MSD	12/10/13 13:40	HG5XPREP	50	4	14.6	ng/L	106	71	125	0.69	24	
WG356150CCV2	CCV	12/10/13 13:45	HG131206-4	10		11.5	ng/L	115	76.5	123.4			
WG356150CCB2	CCB	12/10/13 13:51				U	ng/L		-0.5	0.5			
WG356150CCV3	CCV	12/10/13 14:36	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB3	CCB	12/10/13 14:41				U	ng/L		-0.5	0.5			
WG356150CCV4	CCV	12/10/13 15:17	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB4	CCB	12/10/13 15:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05026	mg/L	100.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0039	.05475	mg/L	101.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0039	.05507	mg/L	102.3	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02006		.01886	mg/L	94	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05088	mg/L	101.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05	.003	.05479	mg/L	103.6	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05	.003	.05403	mg/L	102.1	70	130	1.4	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05014	mg/L	100.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0018	0.0018			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05069	mg/L	101.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04728	mg/L	94.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04743	mg/L	94.8	70	130	0.32	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04891	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0018	0.0018			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00132	0.00132			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04961	mg/L	99.1	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.04859	mg/L	97.1	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.04813	mg/L	96.2	70	130	0.95	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15778-01AS	AS	12/12/13 23:05	WI130816-3	2	.81	2.834	mg/L	101.2	90	110			
L15778-02DUP	DUP	12/12/13 23:08			.83	.809	mg/L				2.6	20	
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L15821***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356350													
WG356350LFB1	LFB	12/12/13 13:58	WI121218-3	1		.982	mg/L	98.2	90	110			
WG356350LFB2	LFB	12/12/13 14:29	WI121218-3	1		1.008	mg/L	100.8	90	110			
L15820-02AS	AS	12/12/13 14:31	WI121218-3	1	U	1.003	mg/L	100.3	90	110			
L15820-03DUP	DUP	12/12/13 14:34			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15822-01DUP	DUP	12/07/13 23:08			6.7	6.77	units				1	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356390													
WG356321LRB	LRB	12/12/13 23:24				U	mg/L		-0.03	0.03			
WG356321LFB	LFB	12/12/13 23:25	WI131206-2	.5		.491	mg/L	98.2	90	110			
L15820-03LFM	LFM	12/12/13 23:43	WI131206-2	.5	.02	.524	mg/L	100.8	90	110			
L15821-01DUP	DUP	12/12/13 23:46			.02	.015	mg/L				28.6	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	20		19.64	mg/L	98.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.9	0.9			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	99.94539		102.7	mg/L	102.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	99.94539	16.3	120	mg/L	103.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	99.94539	16.3	120.3	mg/L	104.1	85	115	0.25	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	99.94539	6	106.3	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	99.94539	6	105	mg/L	99.1	70	130	1.23	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356084													
WG356084PBW	PBW	12/07/13 13:13				U	mg/L		-20	20			
WG356084LCSW	LCSW	12/07/13 13:15	PCN44260	260		248	mg/L	95.4	80	120			
L15847-06DUP	DUP	12/07/13 14:13			150	152	mg/L				1.3	10	
WG356178													
WG356178PBW	PBW	12/10/13 12:00				U	mg/L		-20	20			
WG356178LCSW	LCSW	12/10/13 12:03	PCN44259	260		260	mg/L	100	80	120			
L15669-05DUP	DUP	12/10/13 12:11			29200	29000	mg/L				0.7	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356134													
WG356134PBW	PBW	12/09/13 15:33				U	mg/L		-15	15			
WG356134LCSW	LCSW	12/09/13 15:35	PCN44259	160		156	mg/L	97.5	80	120			
L15826-01DUP	DUP	12/09/13 16:04			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.01	mg/L	100.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.3	0.3			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	1.0009		1.07	mg/L	106.9	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	1.0009	U	1.11	mg/L	110.9	85	115	3.67	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0009	U	1.05	mg/L	104.9	70	130	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0514	mg/L	102.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05282	mg/L	105.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0028	.05978	mg/L	113.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0028	.06016	mg/L	114.6	70	130	0.63	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05106	mg/L	102.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.0523	mg/L	104.5	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	.0019	.05296	mg/L	102	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	.0019	.05271	mg/L	101.5	70	130	0.47	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02002		.01987	mg/L	99.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01001		.009618	mg/L	96.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01001	U	.009139	mg/L	91.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01001	U	.009245	mg/L	92.4	70	130	1.15	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02002		.01936	mg/L	96.7	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01001		.009648	mg/L	96.4	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.01001	U	.009378	mg/L	93.7	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.01001	U	.009334	mg/L	93.2	70	130	0.47	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	100		98.9	mg/L	98.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.9	0.9			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	100.0204		102.4	mg/L	102.4	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	100.0204	83.2	183	mg/L	99.8	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	100.0204	83.2	183.1	mg/L	99.9	85	115	0.05	20	

SPF Water Engineering

ACZ Project ID: ***L15821***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	100.0204	25.7	126.1	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	100.0204	25.7	124.4	mg/L	98.7	70	130	1.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		2.003	mg/L	100.2	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.511	mg/L	102.2	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	2.03	2.44	mg/L	82	85	115			M3
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	2.03	2.439	mg/L	81.8	85	115	0.04	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.2	.696	mg/L	99.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.2	.685	mg/L	97	70	130	1.59	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15737-01DUP	DUP	12/13/13 11:50			10.2	10.2	mg/L				0	20	
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.7	mg/L	109	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			
L15737-02AS	AS	12/16/13 18:32	WI131011-1	60	84.6	145	mg/L	100.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L15821***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05247	mg/L	104.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05422	mg/L	108.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05404	mg/L	108	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05399	mg/L	107.9	70	130	0.09	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05207	mg/L	104.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05049	mg/L	100.9	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.05155	mg/L	103	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.05101	mg/L	101.9	70	130	1.05	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05015		.05309	mg/L	105.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				.0002	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.04925	mg/L	98.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04992	mg/L	99.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04897	mg/L	97.8	70	130	1.92	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05015		.0508	mg/L	101.3	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04893	mg/L	97.8	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05005	U	.04815	mg/L	96.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05005	U	.04875	mg/L	97.4	70	130	1.24	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.9692	mg/L	98.5	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.015	0.015			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.999		1.026	mg/L	102.7	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.999	U	1.06	mg/L	106.1	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.999	U	1.056	mg/L	105.7	85	115	0.38	20	

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ACZ Project ID: ***L15821***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.999	U	1.011	mg/L	101.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.999	U	.996	mg/L	99.7	70	130	1.49	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0521	mg/L	104.2	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05371	mg/L	107.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0018	.05542	mg/L	107.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0018	.05547	mg/L	107.3	70	130	0.09	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0509	mg/L	101.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05228	mg/L	104.6	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.05	.0031	.05723	mg/L	108.3	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.05	.0031	.05692	mg/L	107.6	70	130	0.54	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04956	mg/L	99.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05273	mg/L	105.2	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	.0182	.06954	mg/L	102.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	.0182	.07041	mg/L	104.2	70	130	1.24	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05254	mg/L	104.9	85	115			
L15820-03LFM	LFM	12/14/13 0:37	MS131118-2	.0501	.0166	.06929	mg/L	105.2	70	130			
L15820-03LFMD	LFMD	12/14/13 0:46	MS131118-2	.0501	.0166	.0684	mg/L	103.4	70	130	1.29	20	

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ACZ Project ID: ***L15821***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355874													
WG355874ICV	ICV	12/04/13 21:19	II131113-1	2		1.917	mg/L	95.9	95	105			
WG355874ICB	ICB	12/04/13 21:25				U	mg/L		-0.03	0.03			
WG355874LFB	LFB	12/04/13 21:38	II131119-3	.5		.509	mg/L	101.8	85	115			
L15778-01AS	AS	12/04/13 22:35	II131119-3	.5	.07	.533	mg/L	94.6	85	115			
L15778-01ASD	ASD	12/04/13 22:39	II131119-3	.5	.07	.531	mg/L	94.2	85	115	0.38	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	U	.502	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	U	.494	mg/L	98.8	70	130	1.61	20	

SPF Water Engineering ACZ Project ID: ***L15821***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15821-01	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356178	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15821-02	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356178	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15821-03	WG355874	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356178	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15821-04	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356084	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
L15821-05	WG355900	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15821
Date Received: 12/02/2013 10:09
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15821-01 : Mercury containers were single bagged.

L15821-02 : Mercury containers were single bagged.

L15821-03 : Mercury containers were single bagged.

L15821-04 : Mercury container was single bagged.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2732	7.9	14	Yes

ACZ Laboratories, Inc.
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Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15821
Date Received:	12/02/2013 10:09
Received By:	mtb
Date Printed:	12/2/2013

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. C15821

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**SPF-2014-GW
Sagebrush Spring	11/22/13 9:25		8	X	
Sagebrush Duplicate	11/22/13 9:55		8	X	
Equipment Blank	11/22/13 9:35		8	X	
Transfer Blank	11/22/13 9:45		6		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

**Process as detailed in SPF-2014-GW except no Green dot bottles (i.e.: no dissolved metals and no dissolved low level mercury)

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/23/13		
		APC 12-2-13 10:09	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

C15821 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 19, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15822

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15822. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15822. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 18, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

December 19, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15822

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15822. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15822. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BLM

ACZ Sample ID: ***L15822-01***
Date Sampled: *11/24/13 15:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 16:01	mpb
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:24	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:35	bsu
Total Hot Plate Digestion	M200.2 ICP								12/10/13 12:13	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:39	pmc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BLM

ACZ Sample ID: ***L15822-01***
Date Sampled: *11/24/13 15:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/04/13 23:52	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 18:35	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	12/12/13 21:30	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	12/14/13 1:02	pmc
Arsenic, dissolved	M200.8 ICP-MS	50	3.42			mg/L	0.01	0.05	12/16/13 23:42	msh
Arsenic, total	M200.8 ICP-MS	25	3.270			mg/L	0.005	0.03	12/16/13 20:27	pmc
Barium, dissolved	M200.7 ICP	1	0.073			mg/L	0.003	0.02	12/04/13 23:52	jjc
Barium, total	M200.7 ICP	1	0.068			mg/L	0.003	0.02	12/11/13 18:35	jjc
Beryllium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.003	0.01	12/16/13 23:42	msh
Beryllium, total	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	12/14/13 1:02	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 9:56	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/11/13 14:21	aeb
Boron, dissolved	M200.7 ICP	1	0.64			mg/L	0.01	0.05	12/04/13 23:52	jjc
Boron, total	M200.7 ICP	1	0.64			mg/L	0.01	0.05	12/11/13 14:21	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:30	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 1:02	pmc
Calcium, dissolved	M200.7 ICP	1	152			mg/L	0.2	1	12/04/13 23:52	jjc
Calcium, total	M200.7 ICP	1	150			mg/L	0.2	1	12/11/13 14:21	aeb
Chromium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.03	0.1	12/16/13 23:42	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/14/13 1:02	pmc
Cobalt, dissolved	M200.8 ICP-MS	50	0.076			mg/L	0.003	0.01	12/16/13 23:42	msh
Cobalt, total	M200.8 ICP-MS	1	0.07267			mg/L	0.00005	0.0003	12/14/13 1:02	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 21:30	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 1:02	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:52	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 14:21	aeb
Iron, dissolved	M200.7 ICP	1	146		*	mg/L	0.02	0.05	12/04/13 23:52	jjc
Iron, total	M200.7 ICP	1	139		*	mg/L	0.02	0.05	12/11/13 14:21	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:30	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/14/13 1:02	pmc
Lithium, dissolved	M200.7 ICP	1	0.69			mg/L	0.02	0.1	12/04/13 23:52	jjc
Lithium, total	M200.7 ICP	1	0.66			mg/L	0.02	0.1	12/11/13 14:21	aeb
Magnesium, dissolved	M200.7 ICP	1	7.7			mg/L	0.2	1	12/04/13 23:52	jjc
Magnesium, total	M200.7 ICP	1	7.6			mg/L	0.2	1	12/11/13 14:21	aeb
Manganese, dissolved	M200.8 ICP-MS	50	1.28			mg/L	0.03	0.1	12/16/13 23:42	msh
Manganese, total	M200.8 ICP-MS	25	1.20			mg/L	0.01	0.06	12/16/13 20:27	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	12/06/13 12:14	las
Mercury, total	M1631, Atomic Fluorescence	5	4			ng/L	1	3	12/10/13 13:30	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	12/12/13 21:30	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	12/14/13 1:02	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0764			mg/L	0.0006	0.003	12/12/13 21:30	msh
Nickel, total	M200.8 ICP-MS	1	0.0683			mg/L	0.0006	0.003	12/14/13 1:02	pmc
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.3	2	12/04/13 23:52	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BLM

ACZ Sample ID: ***L15822-01***
Date Sampled: *11/24/13 15:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.6			mg/L	0.3	2	12/11/13 14:21	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/04/13 23:52	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 14:21	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/12/13 21:30	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/14/13 1:02	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:30	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 1:02	pmc
Sodium, dissolved	M200.7 ICP	1	283			mg/L	0.3	2	12/04/13 23:52	jjc
Sodium, total	M200.7 ICP	1	279			mg/L	0.3	2	12/11/13 14:21	aeb
Strontium, dissolved	M200.7 ICP	1	3.47		*	mg/L	0.01	0.05	12/04/13 23:52	jjc
Strontium, total	M200.7 ICP	1	3.26			mg/L	0.01	0.05	12/11/13 14:21	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:30	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 1:02	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 21:30	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/14/13 1:02	pmc
Titanium, dissolved	M200.7 ICP	1	0.010	B		mg/L	0.005	0.03	12/04/13 23:52	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 14:21	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/12/13 21:30	msh
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/14/13 1:02	pmc
Vanadium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.01	0.05	12/16/13 23:42	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/14/13 1:02	pmc
Zinc, dissolved	M200.7 ICP	1	0.47			mg/L	0.01	0.05	12/04/13 23:52	jjc
Zinc, total	M200.7 ICP	1	0.46			mg/L	0.01	0.05	12/11/13 14:21	aeb

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BLM

ACZ Sample ID: ***L15822-01***
Date Sampled: *11/24/13 15:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	47		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	47		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	22.1		*	mg/L	0.5	2.5	12/13/13 16:55	tcd
Conductivity @25C	SM2510B	1	1970		*	umhos/cm	1	10	12/07/13 23:00	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:13	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:33	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.77		*	mg/L	0.1	0.5	12/13/13 16:55	tcd
Hardness as CaCO3	SM2340B - Calculation		412			mg/L	1	7	12/18/13 17:01	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:20	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.71		*	mg/L	0.05	0.5	12/12/13 15:16	tcd
pH (lab)	SM4500H+ B									
pH		1	6.7	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.38		*	mg/L	0.01	0.05	12/12/13 23:53	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1450	H	*	mg/L	10	20	12/03/13 16:40	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1	121	H	*	mg/L	5	20	12/06/13 15:20	id
Sulfate	M300.0 - Ion Chromatography	20	1040		*	mg/L	10	50	12/16/13 19:08	tcd

Arizona license number: AZ0102

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59763

ACZ Sample ID: ***L15822-02***
Date Sampled: *11/24/13 17:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 16:08	mpb
Cyanide, WAD	SM4500-CN I- distillation		-						12/06/13 11:30	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:52	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/12/13 10:49	pmc
Total Hot Plate Digestion	M200.2 ICP								12/10/13 12:46	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59763

ACZ Sample ID: ***L15822-02***
Date Sampled: *11/24/13 17:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:02	jjc
Aluminum, total	M200.7 ICP	1	0.14	B		mg/L	0.03	0.2	12/11/13 18:45	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	12/12/13 21:34	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	12/14/13 1:06	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0713			mg/L	0.0002	0.001	12/12/13 21:34	msh
Arsenic, total	M200.8 ICP-MS	1	0.0658			mg/L	0.0002	0.001	12/14/13 1:06	pmc
Barium, dissolved	M200.7 ICP	1	0.028			mg/L	0.003	0.02	12/05/13 0:02	jjc
Barium, total	M200.7 ICP	1	0.025			mg/L	0.003	0.02	12/11/13 18:45	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:46	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 1:06	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:06	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/11/13 14:30	aeb
Boron, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	12/05/13 0:02	jjc
Boron, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	12/11/13 14:30	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:34	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 1:06	pmc
Calcium, dissolved	M200.7 ICP	1	54.3			mg/L	0.2	1	12/05/13 0:02	jjc
Calcium, total	M200.7 ICP	1	54.3			mg/L	0.2	1	12/11/13 14:30	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 23:46	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/14/13 1:06	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	12/16/13 23:46	msh
Cobalt, total	M200.8 ICP-MS	1	0.00026	B		mg/L	0.00005	0.0003	12/14/13 1:06	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 21:34	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/14/13 1:06	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:02	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 14:30	aeb
Iron, dissolved	M200.7 ICP	1	0.09		*	mg/L	0.02	0.05	12/05/13 0:02	jjc
Iron, total	M200.7 ICP	1	0.20		*	mg/L	0.02	0.05	12/11/13 14:30	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:34	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/14/13 1:06	pmc
Lithium, dissolved	M200.7 ICP	1	0.20			mg/L	0.02	0.1	12/05/13 0:02	jjc
Lithium, total	M200.7 ICP	1	0.18			mg/L	0.02	0.1	12/11/13 14:30	aeb
Magnesium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	12/05/13 0:02	jjc
Magnesium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	12/11/13 14:30	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0960			mg/L	0.0005	0.003	12/16/13 23:46	msh
Manganese, total	M200.8 ICP-MS	1	0.1235			mg/L	0.0005	0.003	12/14/13 1:06	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 12:19	las
Mercury, total	M1631, Atomic Fluorescence	1	1.2			ng/L	0.2	0.5	12/10/13 13:56	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0114			mg/L	0.0005	0.003	12/12/13 21:34	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0117			mg/L	0.0005	0.003	12/14/13 1:06	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 21:34	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/14/13 1:06	pmc
Potassium, dissolved	M200.7 ICP	1	26.8			mg/L	0.3	2	12/05/13 0:02	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59763

ACZ Sample ID: ***L15822-02***
Date Sampled: *11/24/13 17:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	26.6			mg/L	0.3	2	12/11/13 14:30	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:02	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 14:30	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	12/12/13 21:34	msh
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/14/13 1:06	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:34	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/13 1:06	pmc
Sodium, dissolved	M200.7 ICP	1	302			mg/L	0.3	2	12/05/13 0:02	jjc
Sodium, total	M200.7 ICP	1	295			mg/L	0.3	2	12/11/13 14:30	aeb
Strontium, dissolved	M200.7 ICP	1	0.18		*	mg/L	0.01	0.05	12/05/13 0:02	jjc
Strontium, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	12/11/13 14:30	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:34	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/13 1:06	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 21:34	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	12/14/13 1:06	pmc
Titanium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	12/05/13 0:02	jjc
Titanium, total	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	12/11/13 14:30	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	12/12/13 21:34	msh
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	12/14/13 1:06	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0021			mg/L	0.0002	0.001	12/16/13 23:46	msh
Vanadium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0002	0.001	12/14/13 1:06	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:02	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 14:30	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: 59763

ACZ Sample ID: ***L15822-02***
Date Sampled: *11/24/13 17:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	198		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	198		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	10	18.5	B	*	mg/L	5	25	12/13/13 17:13	tcd
Conductivity @25C	SM2510B	1	1630		*	umhos/cm	1	10	12/07/13 23:17	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:14	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:36	pjb
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	1	5	12/13/13 17:13	tcd
Hardness as CaCO3	SM2340B - Calculation		160			mg/L	1	7	12/18/13 17:01	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:21	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:18	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	12/12/13 23:54	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1130	H	*	mg/L	10	20	12/03/13 16:42	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/06/13 15:22	id
Sulfate	M300.0 - Ion Chromatography	10	569		*	mg/L	5	25	12/13/13 17:13	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TRIP BLANK

ACZ Sample ID: ***L15822-03***
Date Sampled: *11/24/13 14:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 14:01	las

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15822***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15822-01DUP	DUP	12/07/13 23:08			47	47	mg/L				0	20	
L15826-02DUP	DUP	12/08/13 0:47			164	165.6	mg/L				1	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0011	U	1.102	mg/L	110.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0011	U	1.1	mg/L	109.9	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356294													
WG356294ICV	ICV	12/11/13 18:07	II131111-1	2		1.984	mg/L	99.2	95	105			
WG356294ICB	ICB	12/11/13 18:13				U	mg/L		-0.09	0.09			
WG356160LRB	LRB	12/11/13 18:29				U	mg/L		-0.066	0.066			
WG356160LFB	LFB	12/11/13 18:32	II131209-3	1.0011		1.035	mg/L	103.4	85	115			
L15822-01LFM	LFM	12/11/13 18:38	II131209-3	1.0011	U	1.071	mg/L	107	70	130			
L15822-01LFMD	LFMD	12/11/13 18:41	II131209-3	1.0011	U	1.053	mg/L	105.2	70	130	1.69	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02		.0212	mg/L	106	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0012	0.0012			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01		.01024	mg/L	102.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01	U	.00932	mg/L	93.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01	U	.00957	mg/L	95.7	70	130	2.65	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02		.02048	mg/L	102.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0012	0.0012			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00088	0.00088			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01		.01138	mg/L	113.8	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.01	.0006	.01068	mg/L	100.8	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.01	.0006	.01071	mg/L	101.1	70	130	0.28	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05235	mg/L	104.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0006	0.0006			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04873	mg/L	97.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0072	.06216	mg/L	109.8	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0072	.06087	mg/L	107.2	70	130	2.1	20	
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.05177	mg/L	103.5	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0006	0.0006			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.0501		.05194	mg/L	103.7	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.0501	.0074	.06374	mg/L	112.5	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.0501	.0074	.06532	mg/L	115.6	70	130	2.45	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05173	mg/L	103.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05208	mg/L	104.1	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.006	.0576	mg/L	103.1	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.006	.05754	mg/L	103	70	130	0.1	20	
WG356507													
WG356507ICV	ICV	12/16/13 20:05	MS131202-2	.05		.05291	mg/L	105.8	90	110			
WG356507ICB	ICB	12/16/13 20:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/16/13 20:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/16/13 20:14	MS131118-2	.05005		.05192	mg/L	103.7	85	115			
L15853-01LFM	LFM	12/16/13 20:32	MS131118-2	.05005	.006	.0568	mg/L	101.5	70	130			
L15853-01LFMD	LFMD	12/16/13 20:40	MS131118-2	.05005	.006	.0566	mg/L	101.1	70	130	0.35	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.073	.564	mg/L	98.2	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.073	.5693	mg/L	99.3	85	115	0.94	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356294													
WG356294ICV	ICV	12/11/13 18:07	II131111-1	2		1.9708	mg/L	98.5	95	105			
WG356294ICB	ICB	12/11/13 18:13				U	mg/L		-0.009	0.009			
WG356160LRB	LRB	12/11/13 18:29				U	mg/L		-0.0066	0.0066			
WG356160LFB	LFB	12/11/13 18:32	II131209-3	.5		.4913	mg/L	98.3	85	115			
L15822-01LFM	LFM	12/11/13 18:38	II131209-3	.5	.068	.5694	mg/L	100.3	70	130			
L15822-01LFMD	LFMD	12/11/13 18:41	II131209-3	.5	.068	.558	mg/L	98	70	130	2.02	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04846	mg/L	96.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04896	mg/L	97.8	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04892	mg/L	97.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04974	mg/L	99.4	70	130	1.66	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04627	mg/L	92.5	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.04822	mg/L	96.2	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.0501	U	.04594	mg/L	91.7	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.0501	U	.04669	mg/L	93.2	70	130	1.62	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15822-01AS	AS	12/05/13 9:59	II131119-3	1	U	1.078	mg/L	107.8	85	115			
L15822-01ASD	ASD	12/05/13 10:03	II131119-3	1	U	1.047	mg/L	104.7	85	115	2.92	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		2.012	mg/L	100.6	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.12	0.12			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.088	0.088			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	1		1.039	mg/L	103.9	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	1	U	1.047	mg/L	104.7	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	1	U	1.03	mg/L	103	70	130	1.64	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5005	.64	1.146	mg/L	101.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5005	.64	1.142	mg/L	100.3	85	115	0.35	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		2.002	mg/L	100.1	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.03	0.03			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.022	0.022			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	.5005		.491	mg/L	98.1	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	.5005	.64	1.161	mg/L	104.1	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	.5005	.64	1.144	mg/L	100.7	70	130	1.48	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04943	mg/L	98.9	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.0501		.04751	mg/L	94.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.0501	U	.05079	mg/L	101.4	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.0501	U	.05082	mg/L	101.4	70	130	0.06	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04928	mg/L	98.6	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05085	mg/L	101.5	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.0501	U	.04983	mg/L	99.5	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.0501	U	.04972	mg/L	99.2	70	130	0.22	20	

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ACZ Project ID: ***L15822***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	68.00225	152	216.6	mg/L	95	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	68.00225	152	216.9	mg/L	95.4	85	115	0.14	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	100		99.03	mg/L	99	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.6	0.6			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.44	0.44			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	68.00225		70.17	mg/L	103.2	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	68.00225	150	221.3	mg/L	104.8	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	68.00225	150	218.7	mg/L	101	70	130	1.18	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.8	mg/L	109.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04768	mg/L	95.4	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04929	mg/L	98.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04731	mg/L	94.5	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04844	mg/L	96.8	70	130	2.36	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0489	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05037	mg/L	100.6	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0052	.05402	mg/L	97.5	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0052	.05432	mg/L	98.1	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04938	mg/L	98.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05123	mg/L	102.4	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.00026	.04999	mg/L	99.4	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.00026	.05044	mg/L	100.3	70	130	0.9	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05114	mg/L	102.2	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.00107	.0498	mg/L	97.4	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.00107	.05024	mg/L	98.2	70	130	0.88	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
L15822-01DUP	DUP	12/07/13 23:08			1970	1959	umhos/cm				0.6	20	
L15826-02DUP	DUP	12/08/13 0:47			445	443	umhos/cm				0.5	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04987	mg/L	99.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04815	mg/L	96.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04858	mg/L	95.9	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04809	mg/L	94.9	70	130	1.01	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05122	mg/L	102.3	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0053	.05369	mg/L	96.7	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0053	.05411	mg/L	97.5	70	130	0.78	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356074													
WG356038LRB	LRB	12/07/13 1:49				U	mg/L		-0.003	0.003			
WG356038LFB	LFB	12/07/13 1:50	WI131202-2	.2		.2005	mg/L	100.3	90	110			
L15768-03DUP	DUP	12/07/13 2:04			U	U	mg/L				0	20	RA
L15777-01LFM	LFM	12/07/13 2:06	WI131202-2	.2	U	.2018	mg/L	100.9	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356008LRB	LRB	12/07/13 1:15				U	mg/L		-0.003	0.003			
WG356008LFB	LFB	12/07/13 1:16	WI131202-4	.2		.2011	mg/L	100.6	90	110			
L15820-01DUP	DUP	12/07/13 1:30			U	U	mg/L				0	20	RA
L15820-02LFM	LFM	12/07/13 1:31	WI131202-4	.2	U	.1912	mg/L	95.6	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	1.5	U	1.66	mg/L	110.7	90	110			M1
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.001	U	1.08	mg/L	107.9	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.98	mg/L	99	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.3	0.3			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.22	0.22			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	1.001		1.02	mg/L	101.9	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	1.001	U	1.07	mg/L	106.9	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	1.001	U	1.08	mg/L	107.9	70	130	0.93	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0014	146	140.2	mg/L	-579.2	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0014	146	140.8	mg/L	-519.3	85	115	0.43	20	M3

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.979	mg/L	99	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.06	0.06			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.044	0.044			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	1.0014		1.001	mg/L	100	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	1.0014	142	139.7	mg/L	69.9	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	1.0014	142	138	mg/L	-99.9	70	130	1.22	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05223	mg/L	104.5	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04812	mg/L	96.1	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.0507	mg/L	101.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.0515	mg/L	102.9	70	130	1.57	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05071	mg/L	101.4	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05092	mg/L	101.7	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0009	.05053	mg/L	99.2	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0009	.05161	mg/L	101.3	70	130	2.11	20	

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ACZ Project ID: ***L15822***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1	.69	1.649	mg/L	95.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1	.69	1.66	mg/L	97	85	115	0.66	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.918	mg/L	95.9	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.06	0.06			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.044	0.044			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	1		.933	mg/L	93.3	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	1	.66	1.654	mg/L	99.4	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	1	.66	1.638	mg/L	97.8	70	130	0.97	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	49.99695	7.7	57.48	mg/L	99.6	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	49.99695	7.7	57.39	mg/L	99.4	85	115	0.16	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	100		96.81	mg/L	96.8	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.6	0.6			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.44	0.44			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	49.99695		49.26	mg/L	98.5	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	49.99695	7.6	57.5	mg/L	99.8	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	49.99695	7.6	57.11	mg/L	99	70	130	0.68	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.05194	mg/L	103.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				.00065	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.1002		.09952	mg/L	99.3	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.1002	.0081	.103	mg/L	94.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.1002	.0081	.105	mg/L	96.7	70	130	1.92	20	

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ACZ Project ID: ***L15822***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05007	mg/L	100.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05081	mg/L	101.5	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0339	.08107	mg/L	94.2	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0339	.08175	mg/L	95.6	70	130	0.84	20	
WG356507													
WG356507ICV	ICV	12/16/13 20:05	MS131202-2	.05		.05109	mg/L	102.2	90	110			
WG356507ICB	ICB	12/16/13 20:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/16/13 20:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/16/13 20:14	MS131118-2	.05005		.05189	mg/L	103.7	85	115			
L15853-01LFM	LFM	12/16/13 20:32	MS131118-2	.05005	.034	.0856	mg/L	103.1	70	130			
L15853-01LFMD	LFMD	12/16/13 20:40	MS131118-2	.05005	.034	.0867	mg/L	105.3	70	130	1.28	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
L15823-02MS	MS	12/06/13 12:34	HG131206-6	2	U	2.1	ng/L	105	71	125			
L15823-02MSD	MSD	12/06/13 12:39	HG131206-6	2	U	2.18	ng/L	109	71	125	3.74	24	
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L15822***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356150													
WG356150CCV1	CCV	12/10/13 11:39	HG131206-4	10		11.2	ng/L	112	76.5	123.4			
WG356150CCB1	CCB	12/10/13 11:45				U	ng/L		-0.5	0.5			
WG356150PQV	PQV	12/10/13 11:50	HG131206-5	.5		.51	ng/L	102	70	130			
WG356150LFB	LFB	12/10/13 11:55	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15822-01MS	MS	12/10/13 13:35	HG5XPREP	50	4	14.5	ng/L	105	71	125			
L15822-01MSD	MSD	12/10/13 13:40	HG5XPREP	50	4	14.6	ng/L	106	71	125	0.69	24	
WG356150CCV2	CCV	12/10/13 13:45	HG131206-4	10		11.5	ng/L	115	76.5	123.4			
WG356150CCB2	CCB	12/10/13 13:51				U	ng/L		-0.5	0.5			
WG356150CCV3	CCV	12/10/13 14:36	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB3	CCB	12/10/13 14:41				U	ng/L		-0.5	0.5			
WG356150CCV4	CCV	12/10/13 15:17	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB4	CCB	12/10/13 15:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02006		.01913	mg/L	95.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04681	mg/L	93.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0045	.05663	mg/L	104.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0045	.05606	mg/L	103.1	70	130	1.01	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02006		.01886	mg/L	94	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0015	0.0015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.0011	0.0011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05088	mg/L	101.8	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05	.0023	.05156	mg/L	98.5	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05	.0023	.05345	mg/L	102.3	70	130	3.6	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04982	mg/L	99.6	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0018	0.0018			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04853	mg/L	97	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04777	mg/L	94.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04709	mg/L	92.9	70	130	1.43	20	

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ACZ Project ID: ***L15822***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04891	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0018	0.0018			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00132	0.00132			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04961	mg/L	99.1	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0036	.05159	mg/L	95.9	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0036	.05149	mg/L	95.7	70	130	0.19	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15778-01AS	AS	12/12/13 23:05	WI130816-3	2	.81	2.834	mg/L	101.2	90	110			
L15778-02DUP	DUP	12/12/13 23:08			.83	.809	mg/L				2.6	20	
L15822-02AS	AS	12/12/13 23:22	WI130816-3	2	U	1.922	mg/L	96.1	90	110			
L15823-01DUP	DUP	12/12/13 23:24			U	U	mg/L				0	20	RA
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356360													
WG356360LFB1	LFB	12/12/13 15:15	WI121218-3	1		1.006	mg/L	100.6	90	110			
L15822-01AS	AS	12/12/13 15:17	WI121218-3	1	.71	1.65	mg/L	94	90	110			
L15822-02DUP	DUP	12/12/13 15:19			U	U	mg/L				0	20	RA
WG356360LFB2	LFB	12/12/13 15:46	WI121218-3	1		1.017	mg/L	101.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15822-01DUP	DUP	12/07/13 23:08			6.7	6.77	units				1	20	
L15826-02DUP	DUP	12/08/13 0:47			8.2	8.23	units				0.4	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

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ACZ Project ID: ***L15822***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356390													
WG356321LRB	LRB	12/12/13 23:24				U	mg/L		-0.03	0.03			
WG356321LFB	LFB	12/12/13 23:25	WI131206-2	.5		.491	mg/L	98.2	90	110			
L15820-03LFM	LFM	12/12/13 23:43	WI131206-2	.5	.02	.524	mg/L	100.8	90	110			
L15821-01DUP	DUP	12/12/13 23:46			.02	.015	mg/L				28.6	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	99.94539	5.7	108	mg/L	102.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	99.94539	5.7	108.4	mg/L	102.8	85	115	0.37	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	20		19.65	mg/L	98.3	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.9	0.9			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.66	0.66			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	99.94539		98.04	mg/L	98.1	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	99.94539	5.6	107	mg/L	101.5	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	99.94539	5.6	106.5	mg/L	101	70	130	0.47	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355807													
WG355807PBW	PBW	12/03/13 16:30				U	mg/L		-20	20			
WG355807LCSW	LCSW	12/03/13 16:31	PCN44257	260		232	mg/L	89.2	80	120			
L15825-03DUP	DUP	12/03/13 16:49			190	188	mg/L				1.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356049													
WG356049PBW	PBW	12/06/13 15:07				U	mg/L		-15	15			
WG356049LCSW	LCSW	12/06/13 15:09	PCN44260	160		149	mg/L	93.1	80	120			
L15845-03DUP	DUP	12/06/13 15:38			309	319	mg/L				3.2	10	

SPF Water Engineering

ACZ Project ID: ***L15822***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0009	U	1.06	mg/L	105.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.99	mg/L	99.5	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.3	0.3			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.22	0.22			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	1.0009		1.03	mg/L	102.9	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	1.0009	U	1.05	mg/L	104.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05222	mg/L	104.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.05033	mg/L	100.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0008	.05773	mg/L	113.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0008	.05694	mg/L	112.2	70	130	1.38	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05106	mg/L	102.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.0523	mg/L	104.5	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	.0006	.05055	mg/L	99.8	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	.0006	.05065	mg/L	100	70	130	0.2	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02002		.02056	mg/L	102.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.00015	0.00015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01001		.009074	mg/L	90.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01001	U	.007763	mg/L	77.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01001	U	.007239	mg/L	72.3	70	130	6.99	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.02002		.01936	mg/L	96.7	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.00015	0.00015			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00011	0.00011			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.01001		.009648	mg/L	96.4	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.01001	U	.009236	mg/L	92.3	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.01001	U	.009269	mg/L	92.6	70	130	0.36	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	100.0204	283	374.4	mg/L	91.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	100.0204	283	375.5	mg/L	92.5	85	115	0.29	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	100		98.56	mg/L	98.6	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.9	0.9			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.66	0.66			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	100.0204		97.41	mg/L	97.4	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	100.0204	279	382.5	mg/L	103.5	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	100.0204	279	376.1	mg/L	97.1	70	130	1.69	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	3.47	3.827	mg/L	71.4	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	3.47	3.844	mg/L	74.8	85	115	0.44	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.03	0.03			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.022	0.022			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	.5		.477	mg/L	95.4	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	.5	3.26	3.763	mg/L	100.6	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	.5	3.26	3.697	mg/L	87.4	70	130	1.77	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.7	mg/L	109	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05257	mg/L	105.1	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04963	mg/L	99.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05338	mg/L	106.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.05376	mg/L	107.4	70	130	0.71	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.05207	mg/L	104.1	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.05049	mg/L	100.9	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	U	.05045	mg/L	100.8	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	U	.05138	mg/L	102.7	70	130	1.83	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05015		.05337	mg/L	106.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04553	mg/L	91	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05284	mg/L	105.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.04659	mg/L	93.1	70	130	12.57	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05015		.0508	mg/L	101.3	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05005		.04893	mg/L	97.8	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05005	U	.04441	mg/L	88.7	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05005	U	.04904	mg/L	98	70	130	9.91	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.999	.01	1.028	mg/L	101.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.999	.01	1.035	mg/L	102.6	85	115	0.68	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.9322	mg/L	96.6	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.015	0.015			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.011	0.011			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	.999		.9901	mg/L	99.1	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	.999	U	1.009	mg/L	101	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	.999	U	1.004	mg/L	100.5	70	130	0.5	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05122	mg/L	102.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04838	mg/L	96.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0018	.05441	mg/L	105.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0018	.05513	mg/L	106.7	70	130	1.31	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.0509	mg/L	101.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0003	0.0003			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00022	0.00022			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.05		.05228	mg/L	104.6	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.05	.0006	.0532	mg/L	105.2	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.05	.0006	.05388	mg/L	106.6	70	130	1.27	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04839	mg/L	96.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0006	0.0006			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05178	mg/L	103.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0051	.05652	mg/L	102.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0051	.05781	mg/L	105.3	70	130	2.26	20	

SPF Water Engineering

ACZ Project ID: ***L15822***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356438													
WG356438ICV	ICV	12/14/13 0:05	MS131202-2	.05		.04892	mg/L	97.8	90	110			
WG356438ICB	ICB	12/14/13 0:08				U	mg/L		-0.0006	0.0006			
WG356260LRB	LRB	12/14/13 0:11				U	mg/L		-0.00044	0.00044			
WG356260LFB	LFB	12/14/13 0:14	MS131118-2	.0501		.05254	mg/L	104.9	85	115			
L15853-01LFM	LFM	12/14/13 1:31	MS131118-2	.0501	.0084	.05947	mg/L	101.9	70	130			
L15853-01LFMD	LFMD	12/14/13 1:35	MS131118-2	.0501	.0084	.05989	mg/L	102.8	70	130	0.7	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.48	.949	mg/L	95.8	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.48	.95	mg/L	96	85	115	0.11	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356236													
WG356236ICV	ICV	12/11/13 13:53	II131111-1	2		1.946	mg/L	97.3	95	105			
WG356236ICB	ICB	12/11/13 13:59				U	mg/L		-0.03	0.03			
WG356160LRB	LRB	12/11/13 14:15				U	mg/L		-0.022	0.022			
WG356160LFB	LFB	12/11/13 14:18	II131209-3	.5		.505	mg/L	101	85	115			
L15822-01LFM	LFM	12/11/13 14:24	II131209-3	.5	.47	.965	mg/L	101	70	130			
L15822-01LFMD	LFMD	12/11/13 14:27	II131209-3	.5	.47	.955	mg/L	99	70	130	1.04	20	

SPF Water Engineering ACZ Project ID: ***L15822***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15822-01	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356236	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356009	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
			M1631, Atomic Fluorescence	DA	Sample required dilution due to reactivity.
	WG355879	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L15822***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15822-02	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356236	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG355879	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for

SPF Water Engineering ACZ Project ID: ***L15822***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15822
Date Received: 12/02/2013 10:09
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15822-01 : Mercury containers were single bagged.

16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2686	8	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

C15822

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2014-GW	**Method 1631						
BLM	11/24/13 15:25	GW	8	X							
59763	11/24/13 17:10	GW	8	X							
Trip Blank	11/24/13 14:00	GW	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	12-4-13 19:38		
		12-5-13 10:09	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

C15822 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15823

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15823. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15823. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 18, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

December 19, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15823

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15823. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15823. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

Additionally, the Alkalinity results for L15823 have been qualified with the H1 flag on the extended qualifier report. The chemist noted that these samples were analyzed as quickly as possible after the Thanksgiving holiday, but the EPA recommended hold time was still not met.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PROD-1

ACZ Sample ID: ***L15823-01***
Date Sampled: *11/22/13 13:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:13	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 16:10	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 13:33	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 12:07	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PROD-1

ACZ Sample ID: ***L15823-01***
Date Sampled: *11/22/13 13:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:05	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:20	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:53	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 22:56	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0629			mg/L	0.0002	0.001	12/12/13 5:53	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0615			mg/L	0.0002	0.001	12/16/13 22:56	pmc
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/05/13 0:05	jjc
Barium, total	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	12/11/13 21:20	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:53	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:56	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:09	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:07	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/05/13 0:05	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	12/11/13 21:20	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:53	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:56	pmc
Calcium, dissolved	M200.7 ICP	1	11.7			mg/L	0.2	1	12/05/13 0:05	jjc
Calcium, total	M200.7 ICP	1	11.8			mg/L	0.2	1	12/11/13 21:20	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 5:53	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 22:56	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	12/12/13 5:53	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:56	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:53	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 22:56	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:05	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:20	jjc
Iron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.02	0.05	12/05/13 0:05	jjc
Iron, total	M200.7 ICP	1	0.06			mg/L	0.02	0.05	12/11/13 21:20	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:53	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:56	pmc
Lithium, dissolved	M200.7 ICP	1	0.16			mg/L	0.02	0.1	12/05/13 0:05	jjc
Lithium, total	M200.7 ICP	1	0.16			mg/L	0.02	0.1	12/11/13 21:20	jjc
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	12/05/13 0:05	jjc
Magnesium, total	M200.7 ICP	1	0.4	B		mg/L	0.2	1	12/11/13 21:20	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0469			mg/L	0.0005	0.003	12/12/13 5:53	pmc
Manganese, total	M200.8 ICP-MS	1	0.0452			mg/L	0.0005	0.003	12/16/13 22:56	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	12/06/13 12:24	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	12/10/13 14:06	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0077			mg/L	0.0005	0.003	12/12/13 5:53	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0075			mg/L	0.0005	0.003	12/16/13 22:56	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:53	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 22:56	pmc
Potassium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.3	2	12/05/13 0:05	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PROD-1

ACZ Sample ID: ***L15823-01***
Date Sampled: *11/22/13 13:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.5	B		mg/L	0.3	2	12/11/13 21:20	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:05	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:20	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/12/13 5:53	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/16/13 22:56	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:53	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:56	pmc
Sodium, dissolved	M200.7 ICP	1	133			mg/L	0.3	2	12/05/13 0:05	jjc
Sodium, total	M200.7 ICP	1	132			mg/L	0.3	2	12/11/13 21:20	jjc
Strontium, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	12/05/13 0:05	jjc
Strontium, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	12/11/13 21:20	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:53	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:56	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 5:53	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 22:56	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:05	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:20	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:53	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:56	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/12/13 5:53	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/16/13 22:56	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:05	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:20	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: PROD-1

ACZ Sample ID: ***L15823-01***
Date Sampled: *11/22/13 13:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	209	H	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1	7	BH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	216	H	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	22.0		*	mg/L	0.5	2.5	12/13/13 18:07	tcd
Conductivity @25C	SM2510B	1	618		*	umhos/cm	1	10	12/07/13 23:26	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:03	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:43	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.06		*	mg/L	0.1	0.5	12/13/13 18:07	tcd
Hardness as CaCO3	SM2340B - Calculation		31			mg/L	1	7	12/18/13 17:05	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:23	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:20	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	12/12/13 23:55	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390	H	*	mg/L	10	20	12/04/13 12:54	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:48	id
Sulfate	M300.0 - Ion Chromatography	1	80.2		*	mg/L	0.5	2.5	12/13/13 18:07	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L15823-02***
Date Sampled: *11/22/13 12:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:13	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 16:27	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 13:48	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 12:19	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L15823-02***
Date Sampled: *11/22/13 12:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:08	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:23	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:56	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 22:59	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0249			mg/L	0.0002	0.001	12/12/13 5:56	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0252			mg/L	0.0002	0.001	12/16/13 22:59	pmc
Barium, dissolved	M200.7 ICP	1	0.051			mg/L	0.003	0.02	12/05/13 0:08	jjc
Barium, total	M200.7 ICP	1	0.051			mg/L	0.003	0.02	12/11/13 21:23	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:56	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:59	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:12	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:10	jjc
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	12/05/13 0:08	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	12/11/13 21:23	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:56	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:59	pmc
Calcium, dissolved	M200.7 ICP	1	56.1			mg/L	0.2	1	12/05/13 0:08	jjc
Calcium, total	M200.7 ICP	1	57			mg/L	0.2	1	12/11/13 21:23	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 5:56	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 22:59	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00039			mg/L	0.00005	0.0003	12/12/13 5:56	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/16/13 22:59	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:56	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 22:59	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:08	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:23	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:08	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:23	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:56	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:59	pmc
Lithium, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.02	0.1	12/05/13 0:08	jjc
Lithium, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.1	12/11/13 21:23	jjc
Magnesium, dissolved	M200.7 ICP	1	11.9			mg/L	0.2	1	12/05/13 0:08	jjc
Magnesium, total	M200.7 ICP	1	12.1			mg/L	0.2	1	12/11/13 21:23	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	12/12/13 5:56	pmc
Manganese, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.003	12/16/13 22:59	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 12:29	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 14:11	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	12/12/13 5:56	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	12/16/13 22:59	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:56	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 22:59	pmc
Potassium, dissolved	M200.7 ICP	1	4.7			mg/L	0.3	2	12/05/13 0:08	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L15823-02***
Date Sampled: *11/22/13 12:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.7			mg/L	0.3	2	12/11/13 21:23	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:08	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:23	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0047			mg/L	0.0001	0.0003	12/12/13 5:56	pmc
Selenium, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0001	0.0003	12/16/13 22:59	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:56	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:59	pmc
Sodium, dissolved	M200.7 ICP	1	34.6			mg/L	0.3	2	12/05/13 0:08	jjc
Sodium, total	M200.7 ICP	1	34.6			mg/L	0.3	2	12/11/13 21:23	jjc
Strontium, dissolved	M200.7 ICP	1	0.26		*	mg/L	0.01	0.05	12/05/13 0:08	jjc
Strontium, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	12/11/13 21:23	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:56	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:59	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 5:56	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 22:59	pmc
Titanium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	12/05/13 0:08	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:23	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	12/12/13 5:56	pmc
Uranium, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0001	0.0005	12/16/13 22:59	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0291			mg/L	0.0002	0.001	12/12/13 5:56	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0307			mg/L	0.0002	0.001	12/16/13 22:59	pmc
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/05/13 0:08	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/11/13 21:23	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L15823-02***
Date Sampled: *11/22/13 12:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	201	H	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	201	H	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	14.2		*	mg/L	0.5	2.5	12/13/13 18:25	tcd
Conductivity @25C	SM2510B	1	493		*	umhos/cm	1	10	12/07/13 23:35	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:04	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:44	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.40	B	*	mg/L	0.1	0.5	12/13/13 18:25	tcd
Hardness as CaCO3	SM2340B - Calculation		189			mg/L	1	7	12/18/13 17:06	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/12/13 23:25	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:21	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	22		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/12/13 23:56	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	340	H	*	mg/L	10	20	12/04/13 12:55	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:51	id
Sulfate	M300.0 - Ion Chromatography	1	41.2		*	mg/L	0.5	2.5	12/13/13 18:25	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L15823-03***
Date Sampled: *11/22/13 10:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:14	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 16:45	bsu
Total Hot Plate Digestion	M200.2 ICP								12/11/13 12:30	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 14:02	scp

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L15823-03***
Date Sampled: *11/22/13 10:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:11	jjc
Aluminum, total	M200.7 ICP	1	0.06	B		mg/L	0.03	0.2	12/11/13 21:26	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 5:59	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 23:02	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0079			mg/L	0.0002	0.001	12/12/13 5:59	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0081			mg/L	0.0002	0.001	12/16/13 23:02	pmc
Barium, dissolved	M200.7 ICP	1	0.032			mg/L	0.003	0.02	12/05/13 0:11	jjc
Barium, total	M200.7 ICP	1	0.031			mg/L	0.003	0.02	12/11/13 21:26	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:59	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:02	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:15	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:13	jjc
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/05/13 0:11	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/11/13 21:26	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:59	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:02	pmc
Calcium, dissolved	M200.7 ICP	1	48.1			mg/L	0.2	1	12/05/13 0:11	jjc
Calcium, total	M200.7 ICP	1	47.5			mg/L	0.2	1	12/11/13 21:26	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	12/12/13 5:59	pmc
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	12/16/13 23:02	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00023	B		mg/L	0.00005	0.0003	12/12/13 5:59	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	12/16/13 23:02	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 5:59	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 23:02	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:11	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:26	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:11	jjc
Iron, total	M200.7 ICP	1	0.06			mg/L	0.02	0.05	12/11/13 21:26	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:59	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:02	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/05/13 0:11	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:26	jjc
Magnesium, dissolved	M200.7 ICP	1	14.2			mg/L	0.2	1	12/05/13 0:11	jjc
Magnesium, total	M200.7 ICP	1	14.1			mg/L	0.2	1	12/11/13 21:26	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	12/12/13 5:59	pmc
Manganese, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	12/16/13 23:02	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/06/13 12:44	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	12/10/13 14:16	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	12/12/13 5:59	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	12/16/13 23:02	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 5:59	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 23:02	pmc
Potassium, dissolved	M200.7 ICP	1	4.3			mg/L	0.3	2	12/05/13 0:11	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L15823-03***
Date Sampled: *11/22/13 10:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	12/11/13 21:26	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:11	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:26	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	12/12/13 5:59	pmc
Selenium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	12/16/13 23:02	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 5:59	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:02	pmc
Sodium, dissolved	M200.7 ICP	1	19.1			mg/L	0.3	2	12/05/13 0:11	jjc
Sodium, total	M200.7 ICP	1	18.5			mg/L	0.3	2	12/11/13 21:26	jjc
Strontium, dissolved	M200.7 ICP	1	0.25		*	mg/L	0.01	0.05	12/05/13 0:11	jjc
Strontium, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	12/11/13 21:26	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 5:59	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:02	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 5:59	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 23:02	pmc
Titanium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	12/05/13 0:11	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:26	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	12/12/13 5:59	pmc
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	12/16/13 23:02	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0201			mg/L	0.0002	0.001	12/12/13 5:59	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0208			mg/L	0.0002	0.001	12/16/13 23:02	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:11	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:26	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L15823-03***
Date Sampled: *11/22/13 10:55*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	168	H	*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	169	H	*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	13.0		*	mg/L	0.5	2.5	12/13/13 18:42	tcd
Conductivity @25C	SM2510B	1	420		*	umhos/cm	1	10	12/07/13 23:44	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:04	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:47	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.37	B	*	mg/L	0.1	0.5	12/13/13 18:42	tcd
Hardness as CaCO3	SM2340B - Calculation		179			mg/L	1	7	12/18/13 17:06	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.70		*	mg/L	0.02	0.1	12/12/13 23:27	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:22	tcd
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	22		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	12/12/13 23:57	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280	H	*	mg/L	10	20	12/04/13 12:56	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:53	id
Sulfate	M300.0 - Ion Chromatography	1	23.8		*	mg/L	0.5	2.5	12/13/13 18:42	tcd

Arizona license number: AZ0102

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: OWYHEE DS

ACZ Sample ID: ***L15823-04***
Date Sampled: *11/20/13 15:10*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.1			ng/L	0.2	0.5	12/06/13 12:49	las
Mercury, total	M1631, Atomic Fluorescence	2	2.4			ng/L	0.4	1	12/10/13 14:21	las

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15823***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15826-02DUP	DUP	12/08/13 0:47			164	165.6	mg/L				1	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0011	U	1.102	mg/L	110.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0011	U	1.1	mg/L	109.9	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0011	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0011	U	1.039	mg/L	103.8	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02		.02066	mg/L	103.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				.00053	mg/L		-0.0012	0.0012			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01		.01061	mg/L	106.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01	.0007	.01083	mg/L	101.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01	.0007	.011	mg/L	103	70	130	1.56	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02		.02027	mg/L	101.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0012	0.0012			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00088	0.00088			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.01		.01127	mg/L	112.7	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.01	U	.01166	mg/L	116.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.01	U	.01143	mg/L	114.3	70	130	1.99	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0535	mg/L	107	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05022	mg/L	100.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0394	.09256	mg/L	106.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0394	.09388	mg/L	108.9	70	130	1.42	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05249	mg/L	105	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0006	0.0006			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00044	0.00044			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05356	mg/L	107	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0449	.09639	mg/L	102.9	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0449	.09665	mg/L	103.4	70	130	0.27	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.073	.564	mg/L	98.2	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.073	.5693	mg/L	99.3	85	115	0.94	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.03	.5282	mg/L	99.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.03	.5232	mg/L	98.6	70	130	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0499	mg/L	99.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05305	mg/L	105.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05156	mg/L	102.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.0506	mg/L	101	70	130	1.88	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04742	mg/L	94.8	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05079	mg/L	101.4	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	U	.04924	mg/L	98.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	U	.04878	mg/L	97.4	70	130	0.94	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15822-01AS	AS	12/05/13 9:59	II131119-3	1	U	1.078	mg/L	107.8	85	115			
L15822-01ASD	ASD	12/05/13 10:03	II131119-3	1	U	1.047	mg/L	104.7	85	115	2.92	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15820-02LFM	LFM	12/12/13 16:39	II131209-3	1	U	1.109	mg/L	110.9	70	130			
L15820-02LFMD	LFMD	12/12/13 16:42	II131209-3	1	U	1.077	mg/L	107.7	70	130	2.93	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5005	.64	1.146	mg/L	101.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5005	.64	1.142	mg/L	100.3	85	115	0.35	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5005	.08	.586	mg/L	101.1	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5005	.08	.582	mg/L	100.3	70	130	0.68	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05087	mg/L	101.7	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	U	.05303	mg/L	105.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	U	.05348	mg/L	106.7	70	130	0.84	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05067	mg/L	101.3	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05342	mg/L	106.6	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	U	.05191	mg/L	103.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	U	.05186	mg/L	103.5	70	130	0.1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	68.00225	152	216.6	mg/L	95	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	68.00225	152	216.9	mg/L	95.4	85	115	0.14	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	68.00225	39	110.8	mg/L	105.6	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	68.00225	39	108.1	mg/L	101.6	70	130	2.47	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.8	mg/L	109.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05131	mg/L	102.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0008	.04931	mg/L	96.9	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0008	.05001	mg/L	98.3	70	130	1.41	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04981	mg/L	99.6	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05113	mg/L	102.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0005	.04913	mg/L	97.2	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0005	.0491	mg/L	97.1	70	130	0.06	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0503	mg/L	100.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05251	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.00012	.05116	mg/L	102	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.00012	.05138	mg/L	102.4	70	130	0.43	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04893	mg/L	97.9	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05142	mg/L	102.7	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0001	.04773	mg/L	95.2	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0001	.04765	mg/L	95	70	130	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
L15826-02DUP	DUP	12/08/13 0:47			445	443	umhos/cm				0.5	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04971	mg/L	99.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04783	mg/L	95.6	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04807	mg/L	96	70	130	0.5	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05072	mg/L	101.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05246	mg/L	104.8	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.04824	mg/L	96.4	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.04827	mg/L	96.4	70	130	0.06	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LRB	LRB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LFB	LFB	12/06/13 22:51	WI131202-2	.2		.1817	mg/L	90.9	90	110			
L15725-01DUP	DUP	12/06/13 22:53			U	U	mg/L				0	20	RA
L15725-02LFM	LFM	12/06/13 22:55	WI131202-2	.2	U	.1821	mg/L	91.1	90	110			
L15823-03DUP	DUP	12/06/13 23:05			U	U	mg/L				0	20	RA
L15824-01LFM	LFM	12/06/13 23:07	WI131202-2	.2	U	.1825	mg/L	91.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L15823***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG356070													
WG355973LRB	LRB	12/06/13 23:26				U	mg/L		-0.003	0.003			
WG355973LFB	LFB	12/06/13 23:26	WI131202-4	.2		.1879	mg/L	94	90	110			
L15821-04DUP	DUP	12/06/13 23:41			U	U	mg/L				0	20	RA
L15821-05LFM	LFM	12/06/13 23:42	WI131202-4	.2	U	.1881	mg/L	94.1	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	1.5	U	1.66	mg/L	110.7	90	110			M1
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.001	U	1.08	mg/L	107.9	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.001	U	1.04	mg/L	103.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.001	U	1.01	mg/L	100.9	70	130	2.93	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0014	146	140.2	mg/L	-579.2	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0014	146	140.8	mg/L	-519.3	85	115	0.43	20	M3

SPF Water Engineering

ACZ Project ID: ***L15823***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0014	.07	1.041	mg/L	97	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0014	.07	1.019	mg/L	94.8	70	130	2.14	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0512	mg/L	102.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05199	mg/L	103.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05156	mg/L	103	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05206	mg/L	104	70	130	0.97	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05112	mg/L	102.2	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05093	mg/L	101.8	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.05073	mg/L	101.4	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.05015	mg/L	100.2	70	130	1.15	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1	.69	1.649	mg/L	95.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1	.69	1.66	mg/L	97	85	115	0.66	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1	.04	1.017	mg/L	97.7	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1	.04	1.009	mg/L	96.9	70	130	0.79	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	49.99695	7.7	57.48	mg/L	99.6	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	49.99695	7.7	57.39	mg/L	99.4	85	115	0.16	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	49.99695	7.1	56.76	mg/L	99.3	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	49.99695	7.1	55.64	mg/L	97.1	70	130	1.99	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0518	mg/L	103.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05248	mg/L	104.9	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05127	mg/L	102.4	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05152	mg/L	102.9	70	130	0.49	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05128	mg/L	102.6	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05207	mg/L	104	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0173	.06584	mg/L	97	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0173	.06604	mg/L	97.4	70	130	0.3	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356009PQV	PQV	12/06/13 10:22	HG131206-5	.5		.58	ng/L	116	70	130			
WG356009LFB	LFB	12/06/13 10:28	HG131206-6	2		1.95	ng/L	97.5	71	125			
WG356009CCV1	CCV	12/06/13 11:13	HG131206-4	10		11.4	ng/L	114	76.5	123.4			
WG356009CCB1	CCB	12/06/13 11:18				U	ng/L		-0.5	0.5			
WG356009CCV2	CCV	12/06/13 12:04	HG131206-4	10		10.1	ng/L	101	76.5	123.4			
WG356009CCB2	CCB	12/06/13 12:09				U	ng/L		-0.5	0.5			
L15823-02MS	MS	12/06/13 12:34	HG131206-6	2	U	2.1	ng/L	105	71	125			
L15823-02MSD	MSD	12/06/13 12:39	HG131206-6	2	U	2.18	ng/L	109	71	125	3.74	24	
WG356009CCV3	CCV	12/06/13 12:54	HG131206-4	10		10.3	ng/L	103	76.5	123.4			
WG356009CCB3	CCB	12/06/13 12:59				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356150													
WG356150CCV1	CCV	12/10/13 11:39	HG131206-4	10		11.2	ng/L	112	76.5	123.4			
WG356150CCB1	CCB	12/10/13 11:45				U	ng/L		-0.5	0.5			
WG356150PQV	PQV	12/10/13 11:50	HG131206-5	.5		.51	ng/L	102	70	130			
WG356150LFB	LFB	12/10/13 11:55	HG131206-6	2		1.95	ng/L	97.5	71	125			
L15822-01MS	MS	12/10/13 13:35	HG5XPREP	50	4	14.5	ng/L	105	71	125			
L15822-01MSD	MSD	12/10/13 13:40	HG5XPREP	50	4	14.6	ng/L	106	71	125	0.69	24	
WG356150CCV2	CCV	12/10/13 13:45	HG131206-4	10		11.5	ng/L	115	76.5	123.4			
WG356150CCB2	CCB	12/10/13 13:51				U	ng/L		-0.5	0.5			
WG356150CCV3	CCV	12/10/13 14:36	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB3	CCB	12/10/13 14:41				U	ng/L		-0.5	0.5			
L15842-01MS	MS	12/10/13 14:56	HG2XPREP	8	.7	5	ng/L	107.6	71	125			
L15842-01MSD	MSD	12/10/13 15:01	HG2XPREP	8	.7	5.02	ng/L	108.1	71	125	0.4	24	
WG356150CCV4	CCV	12/10/13 15:17	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB4	CCB	12/10/13 15:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05026	mg/L	100.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0039	.05475	mg/L	101.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0039	.05507	mg/L	102.3	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02006		.0189	mg/L	94.2	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05		.05071	mg/L	101.4	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05	.0108	.06329	mg/L	105	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05	.0108	.06368	mg/L	105.8	70	130	0.61	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05014	mg/L	100.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0018	0.0018			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05069	mg/L	101.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04728	mg/L	94.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04743	mg/L	94.8	70	130	0.32	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05025	mg/L	100.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0018	0.0018			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00132	0.00132			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.0508	mg/L	101.5	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.04719	mg/L	94.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.04734	mg/L	94.6	70	130	0.32	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15822-02AS	AS	12/12/13 23:22	WI130816-3	2	U	1.922	mg/L	96.1	90	110			
L15823-01DUP	DUP	12/12/13 23:24			U	U	mg/L				0	20	RA
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

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ACZ Project ID: ***L15823***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356360													
WG356360LFB1	LFB	12/12/13 15:15	WI121218-3	1		1.006	mg/L	100.6	90	110			
L15822-01AS	AS	12/12/13 15:17	WI121218-3	1	.71	1.65	mg/L	94	90	110			
L15822-02DUP	DUP	12/12/13 15:19			U	U	mg/L				0	20	RA
WG356360LFB2	LFB	12/12/13 15:46	WI121218-3	1		1.017	mg/L	101.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15826-02DUP	DUP	12/08/13 0:47			8.2	8.23	units				0.4	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356390													
WG356321LRB	LRB	12/12/13 23:24				U	mg/L		-0.03	0.03			
WG356321LFB	LFB	12/12/13 23:25	WI131206-2	.5		.491	mg/L	98.2	90	110			
L15820-03LFM	LFM	12/12/13 23:43	WI131206-2	.5	.02	.524	mg/L	100.8	90	110			
L15821-01DUP	DUP	12/12/13 23:46			.02	.015	mg/L				28.6	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	99.94539	5.7	108	mg/L	102.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	99.94539	5.7	108.4	mg/L	102.8	85	115	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L15823***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	99.94539	6	106.3	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	99.94539	6	105	mg/L	99.1	70	130	1.23	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355853													
WG355853PBW	PBW	12/04/13 12:45				U	mg/L		-20	20			
WG355853LCSW	LCSW	12/04/13 12:46	PCN44257	260		250	mg/L	96.2	80	120			
L15846-03DUP	DUP	12/04/13 13:01			160	156	mg/L				2.5	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356134													
WG356134PBW	PBW	12/09/13 15:33				U	mg/L		-15	15			
WG356134LCSW	LCSW	12/09/13 15:35	PCN44259	160		156	mg/L	97.5	80	120			
L15826-01DUP	DUP	12/09/13 16:04			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0009	U	1.06	mg/L	105.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	1.0009	U	1.05	mg/L	104.9	70	130	0.95	20	

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ACZ Project ID: ***L15823***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0514	mg/L	102.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05282	mg/L	105.5	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	.0028	.05978	mg/L	113.8	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	.0028	.06016	mg/L	114.6	70	130	0.63	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05174	mg/L	103.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05615	mg/L	112.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0042	.05575	mg/L	103	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0042	.0559	mg/L	103.3	70	130	0.27	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02002		.01987	mg/L	99.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01001		.009618	mg/L	96.1	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.01001	U	.009139	mg/L	91.3	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.01001	U	.009245	mg/L	92.4	70	130	1.15	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02002		.02012	mg/L	100.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.01001		.009909	mg/L	99	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.01001	U	.009672	mg/L	96.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.01001	U	.009571	mg/L	95.6	70	130	1.05	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	100.0204	283	374.4	mg/L	91.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	100.0204	283	375.5	mg/L	92.5	85	115	0.29	20	

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ACZ Project ID: ***L15823***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	100.0204	25.7	126.1	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	100.0204	25.7	124.4	mg/L	98.7	70	130	1.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	3.47	3.827	mg/L	71.4	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	3.47	3.844	mg/L	74.8	85	115	0.44	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	.2	.696	mg/L	99.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	.2	.685	mg/L	97	70	130	1.59	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.7	mg/L	109	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05247	mg/L	104.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05422	mg/L	108.3	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.05404	mg/L	108	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.05399	mg/L	107.9	70	130	0.09	20	

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ACZ Project ID: ***L15823***

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05285	mg/L	105.7	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05155	mg/L	103	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.0517	mg/L	103.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.05138	mg/L	102.7	70	130	0.62	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05015		.05309	mg/L	105.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				.0002	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.04925	mg/L	98.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05005	U	.04992	mg/L	99.7	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05005	U	.04897	mg/L	97.8	70	130	1.92	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05015		.05215	mg/L	104	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05058	mg/L	101.1	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.0572	mg/L	114.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.06242	mg/L	124.7	70	130	8.73	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.999	.01	1.028	mg/L	101.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.999	.01	1.035	mg/L	102.6	85	115	0.68	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.999	U	1.011	mg/L	101.2	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.999	U	.996	mg/L	99.7	70	130	1.49	20	

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ACZ Project ID: ***L15823***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0521	mg/L	104.2	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05371	mg/L	107.4	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.05	.0018	.05542	mg/L	107.2	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.05	.0018	.05547	mg/L	107.3	70	130	0.09	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05322	mg/L	106.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05		.05309	mg/L	106.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05	.0048	.05896	mg/L	108.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05	.0048	.05909	mg/L	108.6	70	130	0.22	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04956	mg/L	99.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05273	mg/L	105.2	85	115			
L15820-02AS	AS	12/12/13 5:27	MS131118-2	.0501	.0182	.06954	mg/L	102.5	70	130			
L15820-02ASD	ASD	12/12/13 5:30	MS131118-2	.0501	.0182	.07041	mg/L	104.2	70	130	1.24	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04993	mg/L	99.9	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0006	0.0006			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00044	0.00044			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05306	mg/L	105.9	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	.0436	.09672	mg/L	106	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	.0436	.09635	mg/L	105.3	70	130	0.38	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.48	.949	mg/L	95.8	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.48	.95	mg/L	96	85	115	0.11	20	

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ACZ Project ID: ***L15823***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15820-02LFM	LFM	12/11/13 20:52	II131209-3	.5	U	.502	mg/L	100.4	70	130			
L15820-02LFMD	LFMD	12/11/13 20:55	II131209-3	.5	U	.494	mg/L	98.8	70	130	1.61	20	

SPF Water Engineering ACZ Project ID: ***L15823***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15823-01	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355853	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15823-02	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355853	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15823-03	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356390	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355853	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15823
Date Received: 12/02/2013 10:10
Received By: mtb
Date Printed: 12/3/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15823-01 : Mercury containers were single bagged.

L15823-02 : Mercury containers were single bagged.

L15823-03 : Mercury containers were single bagged.

L15823-04 : Mercury containers were single bagged.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3041	7.1	14	Yes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15823
Date Received:	12/02/2013 10:10
Received By:	mtb
Date Printed:	12/3/2013

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L15823

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 4th Quarter Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**SPF-2014-GW +
Prod-1	11/22/13 13:10		8	X	
Deposit Stock Tank	11/22/13 12:20		8	X	
Government Corral Spring	11/22/13 10:55		8	X	
Owyhee DS	11/20/13 15:10		2		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**For Owyhee DS analyze for Low level mercury per SPF-2014-GW.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	~~11/22/13 7:00~~ 11/28/13 7:00		
		ASC 12-2-13 10:10	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15823 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15824

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15824. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15824. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 18, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

December 19, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15824

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15824. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15824. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L15824-01***
Date Sampled: *11/23/13 14:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:33	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:36	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:25	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/10/13 18:00	las
Total Hot Plate Digestion	M200.2 ICP								12/09/13 10:34	scp

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L15824-01***
Date Sampled: *11/23/13 14:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:14	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/10/13 12:36	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	12/12/13 6:02	pmc
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	12/12/13 4:35	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0922			mg/L	0.0002	0.001	12/12/13 6:02	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0890			mg/L	0.0002	0.001	12/12/13 4:35	pmc
Barium, dissolved	M200.7 ICP	1	0.049			mg/L	0.003	0.02	12/05/13 0:14	jjc
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	12/10/13 12:36	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 6:02	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 4:35	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:25	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/10/13 12:36	aeb
Boron, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	12/05/13 0:14	jjc
Boron, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	12/10/13 12:36	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 6:02	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 4:35	pmc
Calcium, dissolved	M200.7 ICP	1	35.5			mg/L	0.2	1	12/05/13 0:14	jjc
Calcium, total	M200.7 ICP	1	35.2			mg/L	0.2	1	12/10/13 12:36	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 6:02	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/13 4:35	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/12/13 6:02	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/12/13 4:35	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 6:02	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 4:35	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:14	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/10/13 12:36	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:14	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/10/13 12:36	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 6:02	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 4:35	pmc
Lithium, dissolved	M200.7 ICP	1	0.11			mg/L	0.02	0.1	12/05/13 0:14	jjc
Lithium, total	M200.7 ICP	1	0.11			mg/L	0.02	0.1	12/10/13 12:36	aeb
Magnesium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	12/05/13 0:14	jjc
Magnesium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	12/10/13 12:36	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 6:02	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 4:35	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/11/13 11:56	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 14:26	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0214			mg/L	0.0005	0.003	12/12/13 6:02	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0212			mg/L	0.0005	0.003	12/12/13 4:35	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 6:02	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 4:35	pmc
Potassium, dissolved	M200.7 ICP	1	5.8			mg/L	0.3	2	12/05/13 0:14	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L15824-01***
Date Sampled: *11/23/13 14:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.3	2	12/10/13 12:36	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:14	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/10/13 12:36	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	12/12/13 6:02	pmc
Selenium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0003	12/12/13 4:35	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 6:02	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 4:35	pmc
Sodium, dissolved	M200.7 ICP	1	69.8			mg/L	0.3	2	12/05/13 0:14	jjc
Sodium, total	M200.7 ICP	1	68.5			mg/L	0.3	2	12/10/13 12:36	aeb
Strontium, dissolved	M200.7 ICP	1	0.16		*	mg/L	0.01	0.05	12/05/13 0:14	jjc
Strontium, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	12/10/13 12:36	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 6:02	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 4:35	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 6:02	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 4:35	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:14	jjc
Titanium, total	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	12/10/13 12:36	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0058			mg/L	0.0001	0.0005	12/12/13 6:02	pmc
Uranium, total	M200.8 ICP-MS	1	0.0058			mg/L	0.0001	0.0005	12/12/13 4:35	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0221			mg/L	0.0002	0.001	12/12/13 6:02	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0222			mg/L	0.0002	0.001	12/12/13 4:35	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:14	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/10/13 12:36	aeb

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L15824-01***
Date Sampled: *11/23/13 14:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	138		*	mg/L	2	20	12/07/13 0:00	khw
Carbonate as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/07/13 0:00	khw
Total Alkalinity		1	138		*	mg/L	2	20	12/07/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	2	6.45		*	mg/L	1	5	12/13/13 19:00	tcd
Conductivity @25C	SM2510B	1	533		*	umhos/cm	1	10	12/07/13 23:53	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:06	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:37	pjb
Fluoride	M300.0 - Ion Chromatography	2	0.66	B	*	mg/L	0.2	1	12/13/13 19:00	tcd
Hardness as CaCO3	SM2340B - Calculation		113			mg/L	1	7	12/19/13 11:02	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.23		*	mg/L	0.02	0.1	12/12/13 23:28	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 14:41	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/07/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/07/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	12/13/13 0:11	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390	H	*	mg/L	10	20	12/03/13 16:43	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/06/13 15:25	id
Sulfate	M300.0 - Ion Chromatography	2	125		*	mg/L	1	5	12/13/13 19:00	tcd

Arizona license number: AZ0102

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: MERC. TRANSFER/TRIP BLANK

ACZ Sample ID: ***L15824-02***
Date Sampled: *11/23/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/10/13 14:31	las

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15824***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15826-02DUP	DUP	12/08/13 0:47			164	165.6	mg/L				1	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0011	U	1.102	mg/L	110.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0011	U	1.1	mg/L	109.9	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.977	mg/L	98.9	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.09	0.09			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.066	0.066			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1.0011		1.014	mg/L	101.3	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1.0011	U	1.035	mg/L	103.4	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1.0011	U	1.025	mg/L	102.4	70	130	0.97	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02		.02066	mg/L	103.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				.00053	mg/L		-0.0012	0.0012			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01		.01061	mg/L	106.1	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.01	.0007	.01067	mg/L	99.7	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.01	.0007	.01109	mg/L	103.9	70	130	3.86	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.02		.02056	mg/L	102.8	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0012	0.0012			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00088	0.00088			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.01		.01086	mg/L	108.6	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.01	.0028	.01348	mg/L	106.8	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.01	.0028	.01351	mg/L	107.1	70	130	0.22	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0535	mg/L	107	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05022	mg/L	100.3	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	.0922	.1457	mg/L	106.9	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	.0922	.1462	mg/L	107.9	70	130	0.34	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05345	mg/L	106.9	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0006	0.0006			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00044	0.00044			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05255	mg/L	105	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	.018	.07077	mg/L	105.4	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	.018	.07203	mg/L	108	70	130	1.76	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.073	.564	mg/L	98.2	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.073	.5693	mg/L	99.3	85	115	0.94	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.9575	mg/L	97.9	95	105			
WG356155ICB	ICB	12/10/13 12:14				.0036	mg/L		-0.009	0.009			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.0066	0.0066			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	.5		.4705	mg/L	94.1	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	.5	.047	.5103	mg/L	92.7	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	.5	.047	.5115	mg/L	92.9	70	130	0.23	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0499	mg/L	99.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05305	mg/L	105.9	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.0501	U	.04892	mg/L	97.6	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.0501	U	.04906	mg/L	97.9	70	130	0.29	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.04967	mg/L	99.3	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.00015	0.00015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00011	0.00011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.0501		.05011	mg/L	100	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.0501	U	.0502	mg/L	100.2	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.0501	U	.05127	mg/L	102.3	70	130	2.11	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15822-01AS	AS	12/05/13 9:59	II131119-3	1	U	1.078	mg/L	107.8	85	115			
L15822-01ASD	ASD	12/05/13 10:03	II131119-3	1	U	1.047	mg/L	104.7	85	115	2.92	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.978	mg/L	98.9	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.12	0.12			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.088	0.088			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1		.972	mg/L	97.2	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1	U	.938	mg/L	93.8	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1	U	.942	mg/L	94.2	70	130	0.43	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5005	.64	1.146	mg/L	101.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5005	.64	1.142	mg/L	100.3	85	115	0.35	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.993	mg/L	99.7	95	105			
WG356155ICB	ICB	12/10/13 12:14				.013	mg/L		-0.03	0.03			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.022	0.022			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	.5005		.476	mg/L	95.1	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	.5005	.18	.647	mg/L	93.3	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	.5005	.18	.655	mg/L	94.9	70	130	1.23	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05087	mg/L	101.7	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.0501	U	.05273	mg/L	105.2	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.0501	U	.05317	mg/L	106.1	70	130	0.83	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05032	mg/L	100.6	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.0501		.05034	mg/L	100.5	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.0501	.0003	.04921	mg/L	97.6	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.0501	.0003	.0496	mg/L	98.4	70	130	0.79	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	68.00225	152	216.6	mg/L	95	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	68.00225	152	216.9	mg/L	95.4	85	115	0.14	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	100		98.4	mg/L	98.4	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.6	0.6			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.44	0.44			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	68.00225		67.57	mg/L	99.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	68.00225	35.2	103.5	mg/L	100.4	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	68.00225	35.2	103.8	mg/L	100.9	70	130	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.8	mg/L	109.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05131	mg/L	102.5	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.04806	mg/L	96	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.04867	mg/L	97.2	70	130	1.26	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05016	mg/L	100.3	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0015	0.0015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.0011	0.0011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.0501	mg/L	100.1	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	U	.04902	mg/L	97.9	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	U	.04957	mg/L	99	70	130	1.12	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0503	mg/L	100.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05251	mg/L	104.9	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	.00009	.05064	mg/L	101	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	.00009	.05103	mg/L	101.8	70	130	0.77	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05	mg/L	100	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.00015	0.00015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00011	0.00011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05069	mg/L	101.3	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	.00014	.04986	mg/L	99.3	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	.00014	.04882	mg/L	97.3	70	130	2.11	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
L15826-02DUP	DUP	12/08/13 0:47			445	443	umhos/cm				0.5	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04971	mg/L	99.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05085	mg/L	101.6	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.04664	mg/L	93.2	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.04754	mg/L	95	70	130	1.91	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.04972	mg/L	99.4	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0015	0.0015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.0011	0.0011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.04994	mg/L	99.8	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	U	.04806	mg/L	96	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	U	.04804	mg/L	96	70	130	0.04	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LRB	LRB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LFB	LFB	12/06/13 22:51	WI131202-2	.2		.1817	mg/L	90.9	90	110			
L15823-03DUP	DUP	12/06/13 23:05			U	U	mg/L				0	20	RA
L15824-01LFM	LFM	12/06/13 23:07	WI131202-2	.2	U	.1825	mg/L	91.3	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356008LRB	LRB	12/07/13 1:15				U	mg/L		-0.003	0.003			
WG356008LFB	LFB	12/07/13 1:16	WI131202-4	.2		.2011	mg/L	100.6	90	110			
L15820-01DUP	DUP	12/07/13 1:30			U	U	mg/L				0	20	RA
L15820-02LFM	LFM	12/07/13 1:31	WI131202-4	.2	U	.1912	mg/L	95.6	90	110			

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ACZ Project ID: ***L15824***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	1.5	U	1.66	mg/L	110.7	90	110			M1
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.001	U	1.08	mg/L	107.9	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.95	mg/L	97.5	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.3	0.3			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.22	0.22			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1.001		.95	mg/L	94.9	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1.001	U	.95	mg/L	94.9	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1.001	U	.97	mg/L	96.9	70	130	2.08	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0014	146	140.2	mg/L	-579.2	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0014	146	140.8	mg/L	-519.3	85	115	0.43	20	M3

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.06	0.06			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.044	0.044			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1.0014		.955	mg/L	95.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1.0014	U	.947	mg/L	94.6	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1.0014	U	.952	mg/L	95.1	70	130	0.53	20	

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ACZ Project ID: ***L15824***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0512	mg/L	102.4	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05199	mg/L	103.9	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.05134	mg/L	102.6	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.05152	mg/L	102.9	70	130	0.35	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05153	mg/L	103.1	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05002	mg/L	99.9	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	U	.04987	mg/L	99.6	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	U	.04921	mg/L	98.3	70	130	1.33	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1	.69	1.649	mg/L	95.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1	.69	1.66	mg/L	97	85	115	0.66	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.917	mg/L	95.9	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.06	0.06			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.044	0.044			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1		.884	mg/L	88.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1	.11	.986	mg/L	87.6	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1	.11	.978	mg/L	86.8	70	130	0.81	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	49.99695	7.7	57.48	mg/L	99.6	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	49.99695	7.7	57.39	mg/L	99.4	85	115	0.16	20	

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ACZ Project ID: ***L15824***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	100		96.74	mg/L	96.7	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.6	0.6			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.44	0.44			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	49.99695		47.69	mg/L	95.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	49.99695	5.9	53.89	mg/L	96	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	49.99695	5.9	54.04	mg/L	96.3	70	130	0.28	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0518	mg/L	103.6	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05248	mg/L	104.9	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.05086	mg/L	101.6	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.0514	mg/L	102.7	70	130	1.06	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05199	mg/L	104	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0015	0.0015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.0011	0.0011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05093	mg/L	101.8	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	.0203	.07024	mg/L	99.8	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	.0203	.06881	mg/L	96.9	70	130	2.06	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356245													
WG356245CCV1	CCV	12/11/13 11:36	HG131206-4	10		8.95	ng/L	89.5	76.5	123.4			
WG356245CCB1	CCB	12/11/13 11:41				U	ng/L		-0.5	0.5			
WG356245PQV	PQV	12/11/13 11:46	HG131206-5	.5		.48	ng/L	96	70	130			
WG356245LFB	LFB	12/11/13 11:51	HG131206-6	2		1.96	ng/L	98	71	125			
L15825-01MS	MS	12/11/13 12:06	HG131206-6	2	U	2.23	ng/L	111.5	71	125			
L15825-01MSD	MSD	12/11/13 12:11	HG131206-6	2	U	2.12	ng/L	106	71	125	5.06	24	
WG356245CCV2	CCV	12/11/13 12:42	HG131206-4	10		9.41	ng/L	94.1	76.5	123.4			
WG356245CCB2	CCB	12/11/13 12:47				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L15824***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356150													
WG356150CCV1	CCV	12/10/13 11:39	HG131206-4	10		11.2	ng/L	112	76.5	123.4			
WG356150CCB1	CCB	12/10/13 11:45				U	ng/L		-0.5	0.5			
WG356150PQV	PQV	12/10/13 11:50	HG131206-5	.5		.51	ng/L	102	70	130			
WG356150LFB	LFB	12/10/13 11:55	HG131206-6	2		1.95	ng/L	97.5	71	125			
WG356150CCV2	CCV	12/10/13 13:45	HG131206-4	10		11.5	ng/L	115	76.5	123.4			
WG356150CCB2	CCB	12/10/13 13:51				U	ng/L		-0.5	0.5			
WG356150CCV3	CCV	12/10/13 14:36	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB3	CCB	12/10/13 14:41				U	ng/L		-0.5	0.5			
L15842-01MS	MS	12/10/13 14:56	HG2XPREP	8	.7	5	ng/L	107.6	71	125			
L15842-01MSD	MSD	12/10/13 15:01	HG2XPREP	8	.7	5.02	ng/L	108.1	71	125	0.4	24	
WG356150CCV4	CCV	12/10/13 15:17	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB4	CCB	12/10/13 15:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02006		.01948	mg/L	97.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0015	0.0015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05026	mg/L	100.5	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05	.0214	.07221	mg/L	101.6	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05	.0214	.0737	mg/L	104.6	70	130	2.04	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.02006		.01957	mg/L	97.6	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0015	0.0015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.0011	0.0011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05		.04841	mg/L	96.8	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05	.0398	.09093	mg/L	102.3	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05	.0398	.09103	mg/L	102.5	70	130	0.11	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05014	mg/L	100.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0018	0.0018			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05069	mg/L	101.3	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.04614	mg/L	92.2	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.0467	mg/L	93.3	70	130	1.21	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05002	mg/L	100	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0018	0.0018			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00132	0.00132			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.04921	mg/L	98.3	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	.0006	.04798	mg/L	94.7	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	.0006	.048	mg/L	94.7	70	130	0.04	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15822-02AS	AS	12/12/13 23:22	WI130816-3	2	U	1.922	mg/L	96.1	90	110			
L15823-01DUP	DUP	12/12/13 23:24			U	U	mg/L				0	20	RA
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356350													
WG356350LFB1	LFB	12/12/13 13:58	WI121218-3	1		.982	mg/L	98.2	90	110			
WG356350LFB2	LFB	12/12/13 14:29	WI121218-3	1		1.008	mg/L	100.8	90	110			
L15820-02AS	AS	12/12/13 14:31	WI121218-3	1	U	1.003	mg/L	100.3	90	110			
L15820-03DUP	DUP	12/12/13 14:34			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15826-02DUP	DUP	12/08/13 0:47			8.2	8.23	units				0.4	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L15824***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356391													
WG356364LRB	LRB	12/13/13 0:09				U	mg/L		-0.03	0.03			
WG356364LFB	LFB	12/13/13 0:10	WI131206-2	.5		.508	mg/L	101.6	90	110			
L15824-01LFM	LFM	12/13/13 0:12	WI131206-2	.5	.03	.538	mg/L	101.6	90	110			
L15825-01DUP	DUP	12/13/13 0:14			.03	.026	mg/L				14.3	20	RA
WG356391ICV	ICV	12/14/13 13:07	WI131104-3	.65228		.669	mg/L	102.6	90	110			
WG356391ICB	ICB	12/14/13 13:09				U	mg/L		-0.03	0.03			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	99.94539	5.7	108	mg/L	102.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	99.94539	5.7	108.4	mg/L	102.8	85	115	0.37	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	20		19.58	mg/L	97.9	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.9	0.9			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.66	0.66			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	99.94539		96.38	mg/L	96.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	99.94539	5.9	103.1	mg/L	97.3	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	99.94539	5.9	103.3	mg/L	97.5	70	130	0.19	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355807													
WG355807PBW	PBW	12/03/13 16:30				U	mg/L		-20	20			
WG355807LCSW	LCSW	12/03/13 16:31	PCN44257	260		232	mg/L	89.2	80	120			
L15825-03DUP	DUP	12/03/13 16:49			190	188	mg/L				1.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356049													
WG356049PBW	PBW	12/06/13 15:07				U	mg/L		-15	15			
WG356049LCSW	LCSW	12/06/13 15:09	PCN44260	160		149	mg/L	93.1	80	120			
L15845-03DUP	DUP	12/06/13 15:38			309	319	mg/L				3.2	10	

SPF Water Engineering

ACZ Project ID: ***L15824***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0009	U	1.06	mg/L	105.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		2	mg/L	100	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.3	0.3			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.22	0.22			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	1.0009		1.03	mg/L	102.9	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	1.0009	U	1.04	mg/L	103.9	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	1.0009	U	1.05	mg/L	104.9	70	130	0.96	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0514	mg/L	102.8	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05282	mg/L	105.5	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	.0022	.05709	mg/L	109.7	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	.0022	.05731	mg/L	110.1	70	130	0.38	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05249	mg/L	105	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05012	mg/L	100.1	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	.0003	.05112	mg/L	101.5	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	.0003	.05104	mg/L	101.4	70	130	0.16	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.02002		.01987	mg/L	99.3	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.00015	0.00015			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.01001		.009618	mg/L	96.1	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.01001	U	.008978	mg/L	89.7	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.01001	U	.009053	mg/L	90.4	70	130	0.83	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.02002		.0191	mg/L	95.4	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.00015	0.00015			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00011	0.00011			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.01001		.008845	mg/L	88.4	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.01001	U	.008516	mg/L	85.1	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.01001	U	.008528	mg/L	85.2	70	130	0.14	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	100.0204	283	374.4	mg/L	91.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	100.0204	283	375.5	mg/L	92.5	85	115	0.29	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	100		98.27	mg/L	98.3	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.9	0.9			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.66	0.66			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	100.0204		95.88	mg/L	95.9	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	100.0204	68.5	162.4	mg/L	93.9	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	100.0204	68.5	162.2	mg/L	93.7	70	130	0.12	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	3.47	3.827	mg/L	71.4	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	3.47	3.844	mg/L	74.8	85	115	0.44	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.979	mg/L	99	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.03	0.03			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.022	0.022			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	.5		.477	mg/L	95.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	.5	.15	.632	mg/L	96.4	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	.5	.15	.631	mg/L	96.2	70	130	0.16	20	

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ACZ Project ID: ***L15824***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.7	mg/L	109	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.05247	mg/L	104.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.05422	mg/L	108.3	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.05347	mg/L	106.8	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.05397	mg/L	107.8	70	130	0.93	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05196	mg/L	103.9	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.05051	mg/L	100.9	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	U	.05068	mg/L	101.3	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	U	.04986	mg/L	99.6	70	130	1.63	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05015		.05309	mg/L	105.9	90	110			
WG356310ICB	ICB	12/12/13 5:11				.0002	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05005		.04925	mg/L	98.4	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05005	U	.04707	mg/L	94	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05005	U	.04841	mg/L	96.7	70	130	2.81	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05015		.05276	mg/L	105.2	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05005		.04901	mg/L	97.9	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05005	U	.04886	mg/L	97.6	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05005	U	.05015	mg/L	100.2	70	130	2.61	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.999	.01	1.028	mg/L	101.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.999	.01	1.035	mg/L	102.6	85	115	0.68	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.929	mg/L	96.5	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.015	0.015			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.011	0.011			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	.999		.9195	mg/L	92	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	.999	.006	.9263	mg/L	92.1	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	.999	.006	.9217	mg/L	91.7	70	130	0.5	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.0521	mg/L	104.2	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0003	0.0003			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.05		.05371	mg/L	107.4	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.05	.0058	.05815	mg/L	104.7	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.05	.0058	.05875	mg/L	105.9	70	130	1.03	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.05147	mg/L	102.9	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0003	0.0003			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00022	0.00022			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.05		.05047	mg/L	100.9	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.05	.0095	.06062	mg/L	102.2	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.05	.0095	.06057	mg/L	102.1	70	130	0.08	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356310													
WG356310ICV	ICV	12/12/13 5:07	MS131202-2	.05		.04956	mg/L	99.1	90	110			
WG356310ICB	ICB	12/12/13 5:11				U	mg/L		-0.0006	0.0006			
WG356310LFB	LFB	12/12/13 5:14	MS131118-2	.0501		.05273	mg/L	105.2	85	115			
L15824-01AS	AS	12/12/13 6:06	MS131118-2	.0501	.0221	.07327	mg/L	102.1	70	130			
L15824-01ASD	ASD	12/12/13 6:09	MS131118-2	.0501	.0221	.07372	mg/L	103	70	130	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L15824***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356307													
WG356307ICV	ICV	12/12/13 2:56	MS131202-2	.05		.04966	mg/L	99.3	90	110			
WG356307ICB	ICB	12/12/13 2:59				U	mg/L		-0.0006	0.0006			
WG356154LRB	LRB	12/12/13 3:02				U	mg/L		-0.00044	0.00044			
WG356154LFB	LFB	12/12/13 3:05	MS131118-2	.0501		.05145	mg/L	102.7	85	115			
L15801-06LFM	LFM	12/12/13 4:29	MS131118-2	.0501	.0004	.05152	mg/L	102	70	130			
L15801-06LFMD	LFMD	12/12/13 4:32	MS131118-2	.0501	.0004	.05173	mg/L	102.5	70	130	0.41	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.48	.949	mg/L	95.8	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.48	.95	mg/L	96	85	115	0.11	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356155													
WG356155ICV	ICV	12/10/13 12:08	II131111-1	2		1.925	mg/L	96.3	95	105			
WG356155ICB	ICB	12/10/13 12:14				U	mg/L		-0.03	0.03			
WG356100LRB	LRB	12/10/13 12:30				U	mg/L		-0.022	0.022			
WG356100LFB	LFB	12/10/13 12:33	II131119-3	.5		.497	mg/L	99.4	85	115			
L15824-01LFM	LFM	12/10/13 12:39	II131119-3	.5	U	.496	mg/L	99.2	70	130			
L15824-01LFMD	LFMD	12/10/13 12:43	II131119-3	.5	U	.501	mg/L	100.2	70	130	1	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L15824***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15824-01	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356350	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15824
Date Received: 12/02/2013 10:11
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15824-01 : Mercury containers were single bagged.

L15824-02 : Mercury container was single bagged.

16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
4131	6.9	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15824
Date Received:	12/02/2013 10:11
Received By:	mtb
Date Printed:	12/2/2013

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L15824

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per Spec						
Whiskey Spring	11/23/13 14:25		8	X							
Merc. Transfer/Trip Blank	11/23/13 11:35		1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/25/13 8:00		
		12/2/13 10:11	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15824 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15825

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15825. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15825. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 18, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

December 19, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15825

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15825. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15825. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

Additionally, the Alkalinity results for L15825 have been qualified with the H1 flag on the extended qualifier report. The chemist noted that these samples were analyzed as quickly as possible after the Thanksgiving holiday, but the EPA recommended hold time was still not met.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: UPPER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-01***
Date Sampled: *11/23/13 10:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:33	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:42	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:36	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:28	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 12:42	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: UPPER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-01***
Date Sampled: *11/23/13 10:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:18	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:30	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 21:37	msh
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	12/17/13 0:00	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0311			mg/L	0.0002	0.001	12/12/13 21:37	msh
Arsenic, total	M200.8 ICP-MS	1	0.0279			mg/L	0.0002	0.001	12/17/13 0:00	pmc
Barium, dissolved	M200.7 ICP	1	0.067			mg/L	0.003	0.02	12/05/13 0:18	jjc
Barium, total	M200.7 ICP	1	0.067			mg/L	0.003	0.02	12/11/13 21:30	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:49	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:00	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:28	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:16	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/05/13 0:18	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/11/13 21:30	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:37	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:00	pmc
Calcium, dissolved	M200.7 ICP	1	32.2			mg/L	0.2	1	12/05/13 0:18	jjc
Calcium, total	M200.7 ICP	1	32			mg/L	0.2	1	12/11/13 21:30	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 23:49	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/17/13 0:00	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/16/13 23:49	msh
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	12/17/13 0:00	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 21:37	msh
Copper, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.003	12/17/13 0:00	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:18	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:30	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:18	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:30	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:37	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:00	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/05/13 0:18	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:30	jjc
Magnesium, dissolved	M200.7 ICP	1	8.4			mg/L	0.2	1	12/05/13 0:18	jjc
Magnesium, total	M200.7 ICP	1	8.4			mg/L	0.2	1	12/11/13 21:30	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 23:49	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/17/13 0:00	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/11/13 12:01	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 15:13	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	12/12/13 21:37	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0005	0.003	12/17/13 0:00	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 21:37	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/17/13 0:00	pmc
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.3	2	12/05/13 0:18	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: UPPER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-01***
Date Sampled: *11/23/13 10:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	12/11/13 21:30	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:18	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:30	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0003	12/12/13 21:37	msh
Selenium, total	M200.8 ICP-MS	1	0.0013			mg/L	0.0001	0.0003	12/17/13 0:00	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:37	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:00	pmc
Sodium, dissolved	M200.7 ICP	1	38.8			mg/L	0.3	2	12/05/13 0:18	jjc
Sodium, total	M200.7 ICP	1	38			mg/L	0.3	2	12/11/13 21:30	jjc
Strontium, dissolved	M200.7 ICP	1	0.23		*	mg/L	0.01	0.05	12/05/13 0:18	jjc
Strontium, total	M200.7 ICP	1	0.23			mg/L	0.01	0.05	12/11/13 21:30	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:37	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:00	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 21:37	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/17/13 0:00	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:18	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:30	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	12/12/13 21:37	msh
Uranium, total	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	12/17/13 0:00	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0284			mg/L	0.0002	0.001	12/16/13 23:49	msh
Vanadium, total	M200.8 ICP-MS	1	0.0287			mg/L	0.0002	0.001	12/17/13 0:00	pmc
Zinc, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/05/13 0:18	jjc
Zinc, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/11/13 21:30	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: UPPER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-01***
Date Sampled: *11/23/13 10:25*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	149	H		mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	149	H	*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	13.3		*	mg/L	0.5	2.5	12/13/13 19:18	tcd
Conductivity @25C	SM2510B	1	386			umhos/cm	1	10	12/08/13 0:02	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:08	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:38	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.44	B	*	mg/L	0.1	0.5	12/13/13 19:18	tcd
Hardness as CaCO3	SM2340B - Calculation		115			mg/L	1	7	12/19/13 11:12	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B	*	mg/L	0.02	0.1	12/12/13 23:31	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:23	tcd
pH (lab)	SM4500H+ B									
pH		1	8	H		units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	12/13/13 0:13	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280	H	*	mg/L	10	20	12/03/13 16:45	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/06/13 15:27	id
Sulfate	M300.0 - Ion Chromatography	1	33.2		*	mg/L	0.5	2.5	12/13/13 19:18	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LOWER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-02***
Date Sampled: *11/23/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:33	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:48	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:47	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:43	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 13:17	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LOWER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-02***
Date Sampled: *11/23/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:27	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:39	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 21:41	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/17/13 0:04	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0238			mg/L	0.0002	0.001	12/12/13 21:41	msh
Arsenic, total	M200.8 ICP-MS	1	0.0231			mg/L	0.0002	0.001	12/17/13 0:04	pmc
Barium, dissolved	M200.7 ICP	1	0.089			mg/L	0.003	0.02	12/05/13 0:27	jjc
Barium, total	M200.7 ICP	1	0.089			mg/L	0.003	0.02	12/11/13 21:39	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:52	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:04	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:31	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:25	jjc
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	12/05/13 0:27	jjc
Boron, total	M200.7 ICP	1	0.08			mg/L	0.01	0.05	12/11/13 21:39	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:41	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:04	pmc
Calcium, dissolved	M200.7 ICP	1	23.3			mg/L	0.2	1	12/05/13 0:27	jjc
Calcium, total	M200.7 ICP	1	23.5			mg/L	0.2	1	12/11/13 21:39	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 23:52	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/17/13 0:04	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/16/13 23:52	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:04	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 21:41	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/17/13 0:04	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:27	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:39	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:27	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:39	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:41	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:04	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/05/13 0:27	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:39	jjc
Magnesium, dissolved	M200.7 ICP	1	5.2			mg/L	0.2	1	12/05/13 0:27	jjc
Magnesium, total	M200.7 ICP	1	5.2			mg/L	0.2	1	12/11/13 21:39	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	12/16/13 23:52	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/17/13 0:04	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	12/11/13 12:16	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 15:18	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	12/12/13 21:41	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	12/17/13 0:04	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 21:41	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/17/13 0:04	pmc
Potassium, dissolved	M200.7 ICP	1	2.7			mg/L	0.3	2	12/05/13 0:27	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LOWER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-02***
Date Sampled: *11/23/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	2.8			mg/L	0.3	2	12/11/13 21:39	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:27	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:39	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	12/12/13 21:41	msh
Selenium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	12/17/13 0:04	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:41	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:04	pmc
Sodium, dissolved	M200.7 ICP	1	35.1			mg/L	0.3	2	12/05/13 0:27	jjc
Sodium, total	M200.7 ICP	1	34.7			mg/L	0.3	2	12/11/13 21:39	jjc
Strontium, dissolved	M200.7 ICP	1	0.19		*	mg/L	0.01	0.05	12/05/13 0:27	jjc
Strontium, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	12/11/13 21:39	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:41	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:04	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 21:41	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/17/13 0:04	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:27	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:39	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	12/12/13 21:41	msh
Uranium, total	M200.8 ICP-MS	1	0.0051			mg/L	0.0001	0.0005	12/17/13 0:04	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0163			mg/L	0.0002	0.001	12/16/13 23:52	msh
Vanadium, total	M200.8 ICP-MS	1	0.0169			mg/L	0.0002	0.001	12/17/13 0:04	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:27	jjc
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	12/11/13 21:39	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: LOWER SOURDOUGH SPRING

ACZ Sample ID: ***L15825-02***
Date Sampled: *11/23/13 11:35*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	124	H		mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	124	H	*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	6.33		*	mg/L	0.5	2.5	12/13/13 19:36	tcd
Conductivity @25C	SM2510B	1	301			umhos/cm	1	10	12/08/13 0:11	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:09	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:38	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.29	B	*	mg/L	0.1	0.5	12/13/13 19:36	tcd
Hardness as CaCO3	SM2340B - Calculation		80			mg/L	1	7	12/19/13 11:12	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.80		*	mg/L	0.02	0.1	12/12/13 23:32	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:24	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	12/13/13 0:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	220	H	*	mg/L	10	20	12/03/13 16:46	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 15:56	id
Sulfate	M300.0 - Ion Chromatography	1	22.3		*	mg/L	0.5	2.5	12/13/13 19:36	tcd

Arizona license number: AZ0102

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L15825-03***
Date Sampled: *11/23/13 15:50*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:34	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 11:54	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:52	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 9:57	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 13:28	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L15825-03***
Date Sampled: *11/23/13 15:50*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	12/05/13 0:30	jjc
Aluminum, total	M200.7 ICP	1	1.24			mg/L	0.03	0.2	12/11/13 21:42	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 21:44	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/17/13 0:07	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0072			mg/L	0.0002	0.001	12/12/13 21:44	msh
Arsenic, total	M200.8 ICP-MS	1	0.0076			mg/L	0.0002	0.001	12/17/13 0:07	pmc
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	12/05/13 0:30	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	12/11/13 21:42	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:56	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:07	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:34	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:28	jjc
Boron, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	12/05/13 0:30	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/11/13 21:42	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:44	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:07	pmc
Calcium, dissolved	M200.7 ICP	1	23.4			mg/L	0.2	1	12/05/13 0:30	jjc
Calcium, total	M200.7 ICP	1	23.7			mg/L	0.2	1	12/11/13 21:42	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 23:56	msh
Chromium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	12/17/13 0:07	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00026	B		mg/L	0.00005	0.0003	12/16/13 23:56	msh
Cobalt, total	M200.8 ICP-MS	1	0.00057			mg/L	0.00005	0.0003	12/17/13 0:07	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	12/12/13 21:44	msh
Copper, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	12/17/13 0:07	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:30	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:42	jjc
Iron, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.02	0.05	12/05/13 0:30	jjc
Iron, total	M200.7 ICP	1	1.16			mg/L	0.02	0.05	12/11/13 21:42	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:44	msh
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	12/17/13 0:07	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/05/13 0:30	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:42	jjc
Magnesium, dissolved	M200.7 ICP	1	6.4			mg/L	0.2	1	12/05/13 0:30	jjc
Magnesium, total	M200.7 ICP	1	6.8			mg/L	0.2	1	12/11/13 21:42	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0081			mg/L	0.0005	0.003	12/16/13 23:56	msh
Manganese, total	M200.8 ICP-MS	1	0.0334			mg/L	0.0005	0.003	12/17/13 0:07	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.3			ng/L	0.2	0.5	12/11/13 12:21	las
Mercury, total	M1631, Atomic Fluorescence	2	4.6			ng/L	0.4	1	12/03/13 15:23	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	12/12/13 21:44	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0049			mg/L	0.0005	0.003	12/17/13 0:07	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	12/12/13 21:44	msh
Nickel, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0006	0.003	12/17/13 0:07	pmc
Potassium, dissolved	M200.7 ICP	1	3.9			mg/L	0.3	2	12/05/13 0:30	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L15825-03***
Date Sampled: *11/23/13 15:50*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.1			mg/L	0.3	2	12/11/13 21:42	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:30	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:42	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0003	12/12/13 21:44	msh
Selenium, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0003	12/17/13 0:07	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:44	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:07	pmc
Sodium, dissolved	M200.7 ICP	1	37.5			mg/L	0.3	2	12/05/13 0:30	jjc
Sodium, total	M200.7 ICP	1	37.2			mg/L	0.3	2	12/11/13 21:42	jjc
Strontium, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	12/05/13 0:30	jjc
Strontium, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/11/13 21:42	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:44	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:07	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 21:44	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/17/13 0:07	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:30	jjc
Titanium, total	M200.7 ICP	1	0.078			mg/L	0.005	0.03	12/11/13 21:42	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	12/12/13 21:44	msh
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	12/17/13 0:07	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0051			mg/L	0.0002	0.001	12/16/13 23:56	msh
Vanadium, total	M200.8 ICP-MS	1	0.0076			mg/L	0.0002	0.001	12/17/13 0:07	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:30	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:42	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L15825-03***
Date Sampled: *11/23/13 15:50*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	110	H		mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		UH		mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	110	H	*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	10.3			mg/L	0.5	2.5	12/13/13 20:12	tcd
Conductivity @25C	SM2510B	1	326			umhos/cm	1	10	12/08/13 0:19	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:12	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:39	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.44			mg/L	0.1	0.5	12/13/13 20:12	tcd
Hardness as CaCO3	SM2340B - Calculation		85			mg/L	1	7	12/19/13 11:12	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.13		*	mg/L	0.02	0.1	12/12/13 23:34	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:28	tcd
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21			C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.10		*	mg/L	0.01	0.05	12/13/13 0:17	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	190	H	*	mg/L	10	20	12/03/13 16:48	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1	17	BH	*	mg/L	5	20	12/09/13 15:59	id
Sulfate	M300.0 - Ion Chromatography	1	39.8			mg/L	0.5	2.5	12/13/13 20:12	tcd

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15825***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15826-02DUP	DUP	12/08/13 0:47			164	165.6	mg/L				1	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0011	U	1.102	mg/L	110.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0011	U	1.1	mg/L	109.9	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0011	U	1.055	mg/L	105.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0011	U	1.063	mg/L	106.2	70	130	0.76	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02		.0212	mg/L	106	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0012	0.0012			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01		.01024	mg/L	102.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01	U	.00932	mg/L	93.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01	U	.00957	mg/L	95.7	70	130	2.65	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02		.02061	mg/L	103.1	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0012	0.0012			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00088	0.00088			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.01		.01099	mg/L	109.9	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.01	U	.01138	mg/L	113.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.01	U	.01114	mg/L	111.4	70	130	2.13	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05235	mg/L	104.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0006	0.0006			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04873	mg/L	97.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0072	.06216	mg/L	109.8	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0072	.06087	mg/L	107.2	70	130	2.1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.0538	mg/L	107.6	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0006	0.0006			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00044	0.00044			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05072	mg/L	101.3	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0006	.05178	mg/L	102.3	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0006	.05189	mg/L	102.5	70	130	0.21	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.073	.564	mg/L	98.2	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.073	.5693	mg/L	99.3	85	115	0.94	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.067	.5702	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.067	.5698	mg/L	100.6	70	130	0.07	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04846	mg/L	96.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04896	mg/L	97.8	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04892	mg/L	97.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04974	mg/L	99.4	70	130	1.66	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.04704	mg/L	94.1	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.04662	mg/L	93.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	U	.04772	mg/L	95.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	U	.0468	mg/L	93.4	70	130	1.95	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15822-01AS	AS	12/05/13 9:59	II131119-3	1	U	1.078	mg/L	107.8	85	115			
L15822-01ASD	ASD	12/05/13 10:03	II131119-3	1	U	1.047	mg/L	104.7	85	115	2.92	20	
L15825-03AS	AS	12/05/13 10:38	II131119-3	1	U	.98	mg/L	98	85	115			
L15825-03ASD	ASD	12/05/13 10:41	II131119-3	1	U	1.044	mg/L	104.4	85	115	6.32	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15825-01LFM	LFM	12/12/13 17:19	II131209-3	1	U	1.124	mg/L	112.4	70	130			
L15825-01LFMD	LFMD	12/12/13 17:22	II131209-3	1	U	1.111	mg/L	111.1	70	130	1.16	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5005	.64	1.146	mg/L	101.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5005	.64	1.142	mg/L	100.3	85	115	0.35	20	

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ACZ Project ID: ***L15825***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5005	.12	.629	mg/L	101.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5005	.12	.63	mg/L	101.9	70	130	0.16	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04943	mg/L	98.9	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.0501		.04751	mg/L	94.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.0501	U	.05079	mg/L	101.4	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.0501	U	.05082	mg/L	101.4	70	130	0.06	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05145	mg/L	102.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.0516	mg/L	103	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	U	.05133	mg/L	102.5	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	U	.05037	mg/L	100.5	70	130	1.89	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	68.00225	152	216.6	mg/L	95	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	68.00225	152	216.9	mg/L	95.4	85	115	0.14	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	68.00225	32	103.2	mg/L	104.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	68.00225	32	103.8	mg/L	105.6	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.8	mg/L	109.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			
L15825-03DUP	DUP	12/13/13 20:30			10.3	10.3	mg/L				0	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	8.72	41.1	mg/L	107.9	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04768	mg/L	95.4	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04929	mg/L	98.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04731	mg/L	94.5	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04844	mg/L	96.8	70	130	2.36	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05034	mg/L	100.7	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05045	mg/L	100.8	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	U	.04896	mg/L	97.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	U	.04865	mg/L	97.2	70	130	0.64	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04938	mg/L	98.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05123	mg/L	102.4	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.00026	.04999	mg/L	99.4	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.00026	.05044	mg/L	100.3	70	130	0.9	20	

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ACZ Project ID: ***L15825***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.04871	mg/L	97.4	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05064	mg/L	101.2	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.00019	.05036	mg/L	100.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.00019	.04972	mg/L	99	70	130	1.28	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	µmhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	µmhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	µmhos/cm	99.3	90	110			
L15826-02DUP	DUP	12/08/13 0:47			445	443	µmhos/cm				0.5	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	µmhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	µmhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04987	mg/L	99.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04815	mg/L	96.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04858	mg/L	95.9	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04809	mg/L	94.9	70	130	1.01	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05115	mg/L	102.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05128	mg/L	102.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0085	.05604	mg/L	95	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0085	.0557	mg/L	94.3	70	130	0.61	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LRB	LRB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LFB	LFB	12/06/13 22:51	WI131202-2	.2		.1817	mg/L	90.9	90	110			
L15823-03DUP	DUP	12/06/13 23:05			U	U	mg/L				0	20	RA
L15824-01LFM	LFM	12/06/13 23:07	WI131202-2	.2	U	.1825	mg/L	91.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L15825***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356008LRB	LRB	12/07/13 1:15				U	mg/L		-0.003	0.003			
WG356008LFB	LFB	12/07/13 1:16	WI131202-4	.2		.2011	mg/L	100.6	90	110			
L15820-01DUP	DUP	12/07/13 1:30			U	U	mg/L				0	20	RA
L15820-02LFM	LFM	12/07/13 1:31	WI131202-4	.2	U	.1912	mg/L	95.6	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	1.5	U	1.66	mg/L	110.7	90	110			M1
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			
L15825-03DUP	DUP	12/13/13 20:30			1.44	1.45	mg/L				0.7	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	1.5	.6	2.25	mg/L	110	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.001	U	1.08	mg/L	107.9	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.001	U	1.03	mg/L	102.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.001	U	1.05	mg/L	104.9	70	130	1.92	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0014	146	140.2	mg/L	-579.2	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0014	146	140.8	mg/L	-519.3	85	115	0.43	20	M3

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0014	U	1.041	mg/L	104	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0014	U	1.032	mg/L	103.1	70	130	0.87	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05223	mg/L	104.5	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04812	mg/L	96.1	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.0507	mg/L	101.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.0515	mg/L	102.9	70	130	1.57	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05165	mg/L	103.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05032	mg/L	100.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0002	.05077	mg/L	101	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0002	.05029	mg/L	100.1	70	130	0.95	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1	.69	1.649	mg/L	95.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1	.69	1.66	mg/L	97	85	115	0.66	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1	U	1	mg/L	100	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1	U	1	mg/L	100	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	49.99695	7.7	57.48	mg/L	99.6	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	49.99695	7.7	57.39	mg/L	99.4	85	115	0.16	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	49.99695	8.4	58.18	mg/L	99.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	49.99695	8.4	58.08	mg/L	99.4	70	130	0.17	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.05194	mg/L	103.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				.00065	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.1002		.09952	mg/L	99.3	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.1002	.0081	.103	mg/L	94.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.1002	.0081	.105	mg/L	96.7	70	130	1.92	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05168	mg/L	103.4	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05133	mg/L	102.6	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0125	.06306	mg/L	101	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0125	.06218	mg/L	99.3	70	130	1.41	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356245													
WG356245CCV1	CCV	12/11/13 11:36	HG131206-4	10		8.95	ng/L	89.5	76.5	123.4			
WG356245CCB1	CCB	12/11/13 11:41				U	ng/L		-0.5	0.5			
WG356245PQV	PQV	12/11/13 11:46	HG131206-5	.5		.48	ng/L	96	70	130			
WG356245LFB	LFB	12/11/13 11:51	HG131206-6	2		1.96	ng/L	98	71	125			
L15825-01MS	MS	12/11/13 12:06	HG131206-6	2	U	2.23	ng/L	111.5	71	125			
L15825-01MSD	MSD	12/11/13 12:11	HG131206-6	2	U	2.12	ng/L	106	71	125	5.06	24	
WG356245CCV2	CCV	12/11/13 12:42	HG131206-4	10		9.41	ng/L	94.1	76.5	123.4			
WG356245CCB2	CCB	12/11/13 12:47				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
L15826-02MS	MS	12/03/13 15:38	HG131010-5	2	U	2.05	ng/L	102.5	71	125			
L15826-02MSD	MSD	12/03/13 15:43	HG131010-5	2	U	1.92	ng/L	96	71	125	6.55	24	
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02006		.01913	mg/L	95.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04681	mg/L	93.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0045	.05663	mg/L	104.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0045	.05606	mg/L	103.1	70	130	1.01	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02006		.01932	mg/L	96.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05		.05032	mg/L	100.6	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05	.0013	.05307	mg/L	103.5	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05	.0013	.05298	mg/L	103.4	70	130	0.17	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04982	mg/L	99.6	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0018	0.0018			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04853	mg/L	97	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04777	mg/L	94.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04709	mg/L	92.9	70	130	1.43	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.0505	mg/L	101	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0018	0.0018			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00132	0.00132			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.04981	mg/L	99.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0021	.04865	mg/L	93	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0021	.04816	mg/L	92	70	130	1.01	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15822-02AS	AS	12/12/13 23:22	WI130816-3	2	U	1.922	mg/L	96.1	90	110			
L15823-01DUP	DUP	12/12/13 23:24			U	U	mg/L				0	20	RA
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L15825***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356360													
WG356360LFB1	LFB	12/12/13 15:15	WI121218-3	1		1.006	mg/L	100.6	90	110			
L15822-01AS	AS	12/12/13 15:17	WI121218-3	1	.71	1.65	mg/L	94	90	110			
L15822-02DUP	DUP	12/12/13 15:19			U	U	mg/L				0	20	RA
WG356360LFB2	LFB	12/12/13 15:46	WI121218-3	1		1.017	mg/L	101.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15826-02DUP	DUP	12/08/13 0:47			8.2	8.23	units				0.4	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356391													
WG356364LRB	LRB	12/13/13 0:09				U	mg/L		-0.03	0.03			
WG356364LFB	LFB	12/13/13 0:10	WI131206-2	.5		.508	mg/L	101.6	90	110			
L15824-01LFM	LFM	12/13/13 0:12	WI131206-2	.5	.03	.538	mg/L	101.6	90	110			
L15825-01DUP	DUP	12/13/13 0:14			.03	.026	mg/L				14.3	20	RA
WG356391ICV	ICV	12/14/13 13:07	WI131104-3	.65228		.669	mg/L	102.6	90	110			
WG356391ICB	ICB	12/14/13 13:09				U	mg/L		-0.03	0.03			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	99.94539	5.7	108	mg/L	102.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	99.94539	5.7	108.4	mg/L	102.8	85	115	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	99.94539	4.2	104.7	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	99.94539	4.2	104.5	mg/L	100.4	70	130	0.19	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355807													
WG355807PBW	PBW	12/03/13 16:30				U	mg/L		-20	20			
WG355807LCSW	LCSW	12/03/13 16:31	PCN44257	260		232	mg/L	89.2	80	120			
L15825-03DUP	DUP	12/03/13 16:49			190	188	mg/L				1.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356049													
WG356049PBW	PBW	12/06/13 15:07				U	mg/L		-15	15			
WG356049LCSW	LCSW	12/06/13 15:09	PCN44260	160		149	mg/L	93.1	80	120			
L15845-03DUP	DUP	12/06/13 15:38			309	319	mg/L				3.2	10	
WG356134													
WG356134PBW	PBW	12/09/13 15:33				U	mg/L		-15	15			
WG356134LCSW	LCSW	12/09/13 15:35	PCN44259	160		156	mg/L	97.5	80	120			
L15826-01DUP	DUP	12/09/13 16:04			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0009	U	1.06	mg/L	105.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0009	U	1.07	mg/L	106.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05222	mg/L	104.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.05033	mg/L	100.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0008	.05773	mg/L	113.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0008	.05694	mg/L	112.2	70	130	1.38	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05208	mg/L	104.2	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05159	mg/L	103.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0004	.05103	mg/L	101.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0004	.05062	mg/L	100.3	70	130	0.81	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02002		.02056	mg/L	102.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.00015	0.00015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01001		.009074	mg/L	90.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01001	U	.007763	mg/L	77.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01001	U	.007239	mg/L	72.3	70	130	6.99	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02002		.02056	mg/L	102.7	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.01001		.009932	mg/L	99.2	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.01001	U	.009523	mg/L	95.1	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.01001	U	.009342	mg/L	93.3	70	130	1.92	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	100.0204	283	374.4	mg/L	91.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	100.0204	283	375.5	mg/L	92.5	85	115	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	100.0204	38	138.4	mg/L	100.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	100.0204	38	138.9	mg/L	100.9	70	130	0.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	3.47	3.827	mg/L	71.4	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	3.47	3.844	mg/L	74.8	85	115	0.44	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.23	.722	mg/L	98.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.23	.726	mg/L	99.2	70	130	0.55	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
L15821-03DUP	DUP	12/13/13 16:01			U	U	mg/L				0	20	RA
L15821-04AS	AS	12/13/13 16:37	WI131011-1	30	U	32.7	mg/L	109	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			
L15825-03DUP	DUP	12/13/13 20:30			39.8	39.9	mg/L				0.3	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	43.7	75.2	mg/L	105	90	110			

SPF Water Engineering

ACZ Project ID: ***L15825***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05257	mg/L	105.1	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04963	mg/L	99.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05338	mg/L	106.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.05376	mg/L	107.4	70	130	0.71	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05395	mg/L	107.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05158	mg/L	103.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	U	.05214	mg/L	104.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	U	.05141	mg/L	102.7	70	130	1.41	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05015		.05337	mg/L	106.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04553	mg/L	91	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05284	mg/L	105.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.04659	mg/L	93.1	70	130	12.57	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05015		.05263	mg/L	104.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05269	mg/L	105.3	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0002	.04817	mg/L	95.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0002	.04872	mg/L	96.9	70	130	1.14	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.999	.01	1.028	mg/L	101.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.999	.01	1.035	mg/L	102.6	85	115	0.68	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.999	U	1.015	mg/L	101.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.999	U	1.019	mg/L	102	70	130	0.39	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05122	mg/L	102.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04838	mg/L	96.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0018	.05441	mg/L	105.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0018	.05513	mg/L	106.7	70	130	1.31	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05275	mg/L	105.5	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05		.05172	mg/L	103.4	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05	.0005	.0542	mg/L	107.4	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05	.0005	.05391	mg/L	106.8	70	130	0.54	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04839	mg/L	96.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0006	0.0006			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05178	mg/L	103.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0051	.05652	mg/L	102.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0051	.05781	mg/L	105.3	70	130	2.26	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05009	mg/L	100.2	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0006	0.0006			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00044	0.00044			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	.0002	.05227	mg/L	103.9	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	.0002	.05216	mg/L	103.7	70	130	0.21	20	

SPF Water Engineering

ACZ Project ID: ***L15825***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.48	.949	mg/L	95.8	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.48	.95	mg/L	96	85	115	0.11	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.13	.627	mg/L	101.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.13	.635	mg/L	103	70	130	1.27	20	

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L15825***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15825-01	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356398	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG356398	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.

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Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L15825***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15825-02	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356398	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.

SPF Water Engineering ACZ Project ID: ***L15825***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15825-03	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15825
Date Received: 12/02/2013 10:05
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15825-01 : Mercury containers were single bagged.

L15825-02 : Mercury containers were single bagged.

L15825-03 : Mercury containers were single bagged.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2292	5.1	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15825
Date Received:	12/02/2013 10:05
Received By:	mtb
Date Printed:	12/2/2013

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

C15825

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Upper Sourdough Spring	11/23/13 10:25		8	X							
Lower Sourdough Spring	11/23/13 11:35		8	X							
Dry Creek Arm	11/23/13 15:50		8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/25/13 8:00		
		LRC 12-2-13 10:05	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15825 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 19, 2013

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15826

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2013. This project has been assigned to ACZ's project number, L15826. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15826. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 18, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

December 19, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15826

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on December 2, 2013. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L15826. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15826. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

Additionally, the Alkalinity results for L15826 have been qualified with the H1 flag on the extended qualifier report. The chemist noted that these samples were analyzed as quickly as possible after the Thanksgiving holiday, but the EPA recommended hold time was still not met.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L15826-01***
Date Sampled: *11/22/13 14:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:34	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:14	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 15:58	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 14:16	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 13:40	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L15826-01***
Date Sampled: *11/22/13 14:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:33	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:45	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 21:54	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 23:06	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0450			mg/L	0.0002	0.001	12/12/13 21:54	msh
Arsenic, total	M200.8 ICP-MS	1	0.0449			mg/L	0.0002	0.001	12/16/13 23:06	pmc
Barium, dissolved	M200.7 ICP	1	0.012	B		mg/L	0.003	0.02	12/05/13 0:33	jjc
Barium, total	M200.7 ICP	1	0.011	B		mg/L	0.003	0.02	12/11/13 21:45	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:06	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:06	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:44	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:31	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	12/05/13 0:33	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	12/11/13 21:45	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:54	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:06	pmc
Calcium, dissolved	M200.7 ICP	1	25.3			mg/L	0.2	1	12/05/13 0:33	jjc
Calcium, total	M200.7 ICP	1	25.8			mg/L	0.2	1	12/11/13 21:45	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/17/13 0:06	msh
Chromium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.002	12/16/13 23:06	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	12/17/13 0:06	msh
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	12/16/13 23:06	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/12/13 21:54	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 23:06	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:33	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:45	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	12/05/13 0:33	jjc
Iron, total	M200.7 ICP	1	0.03	B		mg/L	0.02	0.05	12/11/13 21:45	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:54	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:06	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	12/05/13 0:33	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:45	jjc
Magnesium, dissolved	M200.7 ICP	1	14.9			mg/L	0.2	1	12/05/13 0:33	jjc
Magnesium, total	M200.7 ICP	1	15.2			mg/L	0.2	1	12/11/13 21:45	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0005	0.003	12/17/13 0:06	msh
Manganese, total	M200.8 ICP-MS	1	0.0173			mg/L	0.0005	0.003	12/16/13 23:06	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/11/13 12:26	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 15:28	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0102			mg/L	0.0005	0.003	12/12/13 21:54	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0108			mg/L	0.0005	0.003	12/16/13 23:06	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/13 21:54	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 23:06	pmc
Potassium, dissolved	M200.7 ICP	1	8.9			mg/L	0.3	2	12/05/13 0:33	jjc

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L15826-01***
Date Sampled: *11/22/13 14:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9.1			mg/L	0.3	2	12/11/13 21:45	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:33	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:45	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0001	0.0003	12/12/13 21:54	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	12/16/13 23:06	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 21:54	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:06	pmc
Sodium, dissolved	M200.7 ICP	1	45.9			mg/L	0.3	2	12/05/13 0:33	jjc
Sodium, total	M200.7 ICP	1	46.4			mg/L	0.3	2	12/11/13 21:45	jjc
Strontium, dissolved	M200.7 ICP	1	0.14		*	mg/L	0.01	0.05	12/05/13 0:33	jjc
Strontium, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/11/13 21:45	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 21:54	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:06	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	12/12/13 21:54	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 23:06	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:33	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:45	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0001	0.0005	12/12/13 21:54	msh
Uranium, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	12/16/13 23:06	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0406			mg/L	0.0002	0.001	12/17/13 0:06	msh
Vanadium, total	M200.8 ICP-MS	1	0.0436			mg/L	0.0002	0.001	12/16/13 23:06	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:33	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:45	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L15826-01***
Date Sampled: *11/22/13 14:20*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	187	H	*	mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	187	H	*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	8.72		*	mg/L	0.5	2.5	12/13/13 20:48	tcd
Conductivity @25C	SM2510B	1	441		*	umhos/cm	1	10	12/08/13 0:29	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:12	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:48	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.60		*	mg/L	0.1	0.5	12/13/13 20:48	tcd
Hardness as CaCO3	SM2340B - Calculation		124			mg/L	1	7	12/19/13 11:20	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.13		*	mg/L	0.02	0.1	12/12/13 23:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:29	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	12/13/13 0:20	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280	H	*	mg/L	10	20	12/07/13 13:52	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 16:01	id
Sulfate	M300.0 - Ion Chromatography	1	43.7		*	mg/L	0.5	2.5	12/13/13 20:48	tcd

Arizona license number: AZ0102

** Please refer to Qualifier Reports for details.*

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L15826-02***
Date Sampled: *11/22/13 15:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/05/13 13:34	tcd
Cyanide, WAD	SM4500-CN I- distillation								12/05/13 15:14	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 16:03	mpb
Total Hot Plate Digestion	M200.2 ICP								12/11/13 13:52	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 15:00	scp

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L15826-02***
Date Sampled: *11/22/13 15:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:37	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:54	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/12/13 22:04	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 23:15	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0412			mg/L	0.0002	0.001	12/12/13 22:04	msh
Arsenic, total	M200.8 ICP-MS	1	0.0435			mg/L	0.0002	0.001	12/16/13 23:15	pmc
Barium, dissolved	M200.7 ICP	1	0.009	B		mg/L	0.003	0.02	12/05/13 0:37	jjc
Barium, total	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	12/11/13 21:54	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:16	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:15	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:47	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:41	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/05/13 0:37	jjc
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	12/11/13 21:54	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 22:04	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:15	pmc
Calcium, dissolved	M200.7 ICP	1	26.9			mg/L	0.2	1	12/05/13 0:37	jjc
Calcium, total	M200.7 ICP	1	27.3			mg/L	0.2	1	12/11/13 21:54	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	12/17/13 0:16	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	12/16/13 23:15	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/17/13 0:16	msh
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	12/16/13 23:15	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/17/13 0:16	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 23:15	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:37	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:54	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/05/13 0:37	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	12/11/13 21:54	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 22:04	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:15	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.1	12/05/13 0:37	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:54	jjc
Magnesium, dissolved	M200.7 ICP	1	15.3			mg/L	0.2	1	12/05/13 0:37	jjc
Magnesium, total	M200.7 ICP	1	15.4			mg/L	0.2	1	12/11/13 21:54	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	12/17/13 0:16	msh
Manganese, total	M200.8 ICP-MS	1	0.0057			mg/L	0.0005	0.003	12/16/13 23:15	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/11/13 12:32	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/03/13 15:33	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	12/12/13 22:04	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0097			mg/L	0.0005	0.003	12/16/13 23:15	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/17/13 0:16	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 23:15	pmc
Potassium, dissolved	M200.7 ICP	1	9.1			mg/L	0.3	2	12/05/13 0:37	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L15826-02***
Date Sampled: *11/22/13 15:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9.2			mg/L	0.3	2	12/11/13 21:54	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:37	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:54	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0049			mg/L	0.0001	0.0003	12/17/13 0:16	msh
Selenium, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0001	0.0003	12/16/13 23:15	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/13 22:04	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 23:15	pmc
Sodium, dissolved	M200.7 ICP	1	44			mg/L	0.3	2	12/05/13 0:37	jjc
Sodium, total	M200.7 ICP	1	43.9			mg/L	0.3	2	12/11/13 21:54	jjc
Strontium, dissolved	M200.7 ICP	1	0.16			mg/L	0.01	0.05	12/05/13 0:37	jjc
Strontium, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	12/11/13 21:54	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/13 22:04	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 23:15	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/12/13 22:04	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 23:15	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:37	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:54	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	12/12/13 22:04	msh
Uranium, total	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	12/16/13 23:15	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0446			mg/L	0.0002	0.001	12/17/13 0:16	msh
Vanadium, total	M200.8 ICP-MS	1	0.0458			mg/L	0.0002	0.001	12/16/13 23:15	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:37	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/11/13 21:54	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L15826-02***
Date Sampled: *11/22/13 15:00*
Date Received: *12/02/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	164	H	*	mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1		UH	*	mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		UH	*	mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	164	H	*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	10.7		*	mg/L	0.5	2.5	12/13/13 22:00	tcd
Conductivity @25C	SM2510B	1	445		*	umhos/cm	1	10	12/08/13 0:38	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:13	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/06/13 23:49	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.63		*	mg/L	0.1	0.5	12/13/13 22:00	tcd
Hardness as CaCO3	SM2340B - Calculation		130			mg/L	1	7	12/19/13 11:21	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.02		*	mg/L	0.02	0.1	12/12/13 23:36	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:30	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	12/13/13 0:21	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290	H	*	mg/L	10	20	12/07/13 13:55	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/09/13 16:07	id
Sulfate	M300.0 - Ion Chromatography	1	43.7		*	mg/L	0.5	2.5	12/13/13 22:00	tcd

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15826***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
L15826-02DUP	DUP	12/08/13 0:47			164	165.6	mg/L				1	20	
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0011	U	1.102	mg/L	110.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0011	U	1.1	mg/L	109.9	85	115	0.18	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0011	U	1.099	mg/L	109.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0011	U	1.089	mg/L	108.8	85	115	0.91	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0011	U	1.055	mg/L	105.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0011	U	1.063	mg/L	106.2	70	130	0.76	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02		.0212	mg/L	106	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0012	0.0012			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01		.01024	mg/L	102.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01	U	.00932	mg/L	93.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01	U	.00957	mg/L	95.7	70	130	2.65	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02		.02027	mg/L	101.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0012	0.0012			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00088	0.00088			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.01		.01127	mg/L	112.7	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.01	U	.01166	mg/L	116.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.01	U	.01143	mg/L	114.3	70	130	1.99	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05235	mg/L	104.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0006	0.0006			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04873	mg/L	97.4	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0072	.06216	mg/L	109.8	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0072	.06087	mg/L	107.2	70	130	2.1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05249	mg/L	105	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0006	0.0006			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00044	0.00044			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05356	mg/L	107	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0449	.09639	mg/L	102.9	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0449	.09665	mg/L	103.4	70	130	0.27	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.073	.564	mg/L	98.2	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.073	.5693	mg/L	99.3	85	115	0.94	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.052	.557	mg/L	101	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.052	.5425	mg/L	98.1	85	115	2.64	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.067	.5702	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.067	.5698	mg/L	100.6	70	130	0.07	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04846	mg/L	96.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04896	mg/L	97.8	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04892	mg/L	97.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04974	mg/L	99.4	70	130	1.66	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04742	mg/L	94.8	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05079	mg/L	101.4	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	U	.04924	mg/L	98.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	U	.04878	mg/L	97.4	70	130	0.94	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15825-03AS	AS	12/05/13 10:38	II131119-3	1	U	.98	mg/L	98	85	115			
L15825-03ASD	ASD	12/05/13 10:41	II131119-3	1	U	1.044	mg/L	104.4	85	115	6.32	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15825-01LFM	LFM	12/12/13 17:19	II131209-3	1	U	1.124	mg/L	112.4	70	130			
L15825-01LFMD	LFMD	12/12/13 17:22	II131209-3	1	U	1.111	mg/L	111.1	70	130	1.16	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5005	.64	1.146	mg/L	101.1	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5005	.64	1.142	mg/L	100.3	85	115	0.35	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5005	U	.536	mg/L	107.1	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5005	U	.527	mg/L	105.3	85	115	1.69	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5005	.12	.629	mg/L	101.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5005	.12	.63	mg/L	101.9	70	130	0.16	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04943	mg/L	98.9	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.0501		.04751	mg/L	94.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.0501	U	.05079	mg/L	101.4	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.0501	U	.05082	mg/L	101.4	70	130	0.06	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05067	mg/L	101.3	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05342	mg/L	106.6	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	U	.05191	mg/L	103.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	U	.05186	mg/L	103.5	70	130	0.1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	68.00225	152	216.6	mg/L	95	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	68.00225	152	216.9	mg/L	95.4	85	115	0.14	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	68.00225	15.5	87.01	mg/L	105.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	68.00225	15.5	85.84	mg/L	103.4	85	115	1.35	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	68.00225	32	103.2	mg/L	104.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	68.00225	32	103.8	mg/L	105.6	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			
L15825-03DUP	DUP	12/13/13 20:30			10.3	10.3	mg/L				0	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	8.72	41.1	mg/L	107.9	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04768	mg/L	95.4	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04929	mg/L	98.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	U	.04731	mg/L	94.5	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	U	.04844	mg/L	96.8	70	130	2.36	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04981	mg/L	99.6	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05113	mg/L	102.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0005	.04913	mg/L	97.2	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0005	.0491	mg/L	97.1	70	130	0.06	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04938	mg/L	98.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.00015	0.00015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05123	mg/L	102.4	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.00026	.04999	mg/L	99.4	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.00026	.05044	mg/L	100.3	70	130	0.9	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04893	mg/L	97.9	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05142	mg/L	102.7	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0001	.04773	mg/L	95.2	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0001	.04765	mg/L	95	70	130	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
L15826-02DUP	DUP	12/08/13 0:47			445	443	umhos/cm				0.5	20	
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04987	mg/L	99.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04815	mg/L	96.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04858	mg/L	95.9	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04809	mg/L	94.9	70	130	1.01	20	
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04661	mg/L	93.2	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04826	mg/L	96.4	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0007	.04643	mg/L	91.4	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0007	.04767	mg/L	93.8	70	130	2.64	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05072	mg/L	101.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05246	mg/L	104.8	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.04824	mg/L	96.4	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.04827	mg/L	96.4	70	130	0.06	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LRB	LRB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG355962LFB	LFB	12/06/13 22:51	WI131202-2	.2		.1817	mg/L	90.9	90	110			
L15823-03DUP	DUP	12/06/13 23:05			U	U	mg/L				0	20	RA
L15824-01LFM	LFM	12/06/13 23:07	WI131202-2	.2	U	.1825	mg/L	91.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L15826***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356068													
WG356068ICV	ICV	12/06/13 22:49	WI131202-6	.3		.2925	mg/L	97.5	90	110			
WG356068ICB	ICB	12/06/13 22:50				U	mg/L		-0.003	0.003			
WG356070													
WG355973LRB	LRB	12/06/13 23:26				U	mg/L		-0.003	0.003			
WG355973LFB	LFB	12/06/13 23:26	WI131202-4	.2		.1879	mg/L	94	90	110			
L15821-04DUP	DUP	12/06/13 23:41			U	U	mg/L				0	20	RA
L15821-05LFM	LFM	12/06/13 23:42	WI131202-4	.2	U	.1881	mg/L	94.1	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			
L15825-03DUP	DUP	12/13/13 20:30			1.44	1.45	mg/L				0.7	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	1.5	.6	2.25	mg/L	110	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.001	U	1.08	mg/L	107.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.001	U	1.08	mg/L	107.9	85	115	0	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.001	U	1.06	mg/L	105.9	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.001	U	1.03	mg/L	102.9	85	115	2.87	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.001	U	1.03	mg/L	102.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.001	U	1.05	mg/L	104.9	70	130	1.92	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0014	146	140.2	mg/L	-579.2	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0014	146	140.8	mg/L	-519.3	85	115	0.43	20	M3
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0014	.03	1.069	mg/L	104.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0014	.03	1.033	mg/L	101.2	85	115	3.43	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0014	U	1.041	mg/L	104	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0014	U	1.032	mg/L	103.1	70	130	0.87	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05223	mg/L	104.5	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04812	mg/L	96.1	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.0507	mg/L	101.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.0515	mg/L	102.9	70	130	1.57	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05112	mg/L	102.2	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05093	mg/L	101.8	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.05073	mg/L	101.4	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.05015	mg/L	100.2	70	130	1.15	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1	.69	1.649	mg/L	95.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1	.69	1.66	mg/L	97	85	115	0.66	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	1	.02	1.008	mg/L	98.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1	.02	1.001	mg/L	98.1	85	115	0.7	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1	U	1	mg/L	100	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1	U	1	mg/L	100	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	49.99695	7.7	57.48	mg/L	99.6	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	49.99695	7.7	57.39	mg/L	99.4	85	115	0.16	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	49.99695	6.2	56.8	mg/L	101.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	49.99695	6.2	55.94	mg/L	99.5	85	115	1.53	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	49.99695	8.4	58.18	mg/L	99.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	49.99695	8.4	58.08	mg/L	99.4	70	130	0.17	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.05194	mg/L	103.9	90	110			
WG356429ICB	ICB	12/16/13 23:35				.00065	mg/L		-0.0015	0.0015			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.1002		.09952	mg/L	99.3	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.1002	.0081	.103	mg/L	94.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.1002	.0081	.105	mg/L	96.7	70	130	1.92	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05128	mg/L	102.6	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05207	mg/L	104	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0173	.06584	mg/L	97	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0173	.06604	mg/L	97.4	70	130	0.3	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356245													
WG356245CCV1	CCV	12/11/13 11:36	HG131206-4	10		8.95	ng/L	89.5	76.5	123.4			
WG356245CCB1	CCB	12/11/13 11:41				U	ng/L		-0.5	0.5			
WG356245PQV	PQV	12/11/13 11:46	HG131206-5	.5		.48	ng/L	96	70	130			
WG356245LFB	LFB	12/11/13 11:51	HG131206-6	2		1.96	ng/L	98	71	125			
L15825-01MS	MS	12/11/13 12:06	HG131206-6	2	U	2.23	ng/L	111.5	71	125			
L15825-01MSD	MSD	12/11/13 12:11	HG131206-6	2	U	2.12	ng/L	106	71	125	5.06	24	
WG356245CCV2	CCV	12/11/13 12:42	HG131206-4	10		9.41	ng/L	94.1	76.5	123.4			
WG356245CCB2	CCB	12/11/13 12:47				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355492													
WG355492ICV	ICV	11/26/13 13:42	HG131010-4	10		10.5	ng/L	105	79	121			
WG355492ICB	ICB	11/26/13 13:47				U	ng/L		-0.5	0.5			
WG355755													
WG355755CCV1	CCV	12/03/13 13:06	HG131010-4	10		8.79	ng/L	87.9	76.5	123.4			
WG355755CCB1	CCB	12/03/13 13:11				U	ng/L		-0.5	0.5			
WG355755PQV	PQV	12/03/13 13:16	HG131010-6	.5		.36	ng/L	72	70	130			
WG355755LFB	LFB	12/03/13 13:21	HG131010-5	2		1.58	ng/L	79	71	125			
WG355755CCV2	CCV	12/03/13 14:12	HG131010-4	10		9.16	ng/L	91.6	76.5	123.4			
WG355755CCB2	CCB	12/03/13 14:17				U	ng/L		-0.5	0.5			
WG355755CCV3	CCV	12/03/13 15:02	HG131010-4	10		8.9	ng/L	89	76.5	123.4			
WG355755CCB3	CCB	12/03/13 15:08				U	ng/L		-0.5	0.5			
L15826-02MS	MS	12/03/13 15:38	HG131010-5	2	U	2.05	ng/L	102.5	71	125			
L15826-02MSD	MSD	12/03/13 15:43	HG131010-5	2	U	1.92	ng/L	96	71	125	6.55	24	
WG355755CCV4	CCV	12/03/13 15:48	HG131010-4	10		9.39	ng/L	93.9	76.5	123.4			
WG355755CCB4	CCB	12/03/13 15:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02006		.01913	mg/L	95.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0015	0.0015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04681	mg/L	93.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0045	.05663	mg/L	104.3	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0045	.05606	mg/L	103.1	70	130	1.01	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02006		.0189	mg/L	94.2	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0015	0.0015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.0011	0.0011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05		.05071	mg/L	101.4	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05	.0108	.06329	mg/L	105	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05	.0108	.06368	mg/L	105.8	70	130	0.61	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.04982	mg/L	99.6	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0018	0.0018			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04853	mg/L	97	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0006	.04777	mg/L	94.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0006	.04709	mg/L	92.9	70	130	1.43	20	
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04755	mg/L	95.1	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0018	0.0018			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.04904	mg/L	98	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0007	.04674	mg/L	92	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0007	.04742	mg/L	93.3	70	130	1.44	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05025	mg/L	100.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0018	0.0018			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00132	0.00132			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.0508	mg/L	101.5	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.04719	mg/L	94.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.04734	mg/L	94.6	70	130	0.32	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
L15822-02AS	AS	12/12/13 23:22	WI130816-3	2	U	1.922	mg/L	96.1	90	110			
L15823-01DUP	DUP	12/12/13 23:24			U	U	mg/L				0	20	RA
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L15826***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356360													
WG356360LFB1	LFB	12/12/13 15:15	WI121218-3	1		1.006	mg/L	100.6	90	110			
L15822-01AS	AS	12/12/13 15:17	WI121218-3	1	.71	1.65	mg/L	94	90	110			
L15822-02DUP	DUP	12/12/13 15:19			U	U	mg/L				0	20	RA
WG356360LFB2	LFB	12/12/13 15:46	WI121218-3	1		1.017	mg/L	101.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15826-02DUP	DUP	12/08/13 0:47			8.2	8.23	units				0.4	20	
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356391													
WG356364LRB	LRB	12/13/13 0:09				U	mg/L		-0.03	0.03			
WG356364LFB	LFB	12/13/13 0:10	WI131206-2	.5		.508	mg/L	101.6	90	110			
L15824-01LFM	LFM	12/13/13 0:12	WI131206-2	.5	.03	.538	mg/L	101.6	90	110			
L15825-01DUP	DUP	12/13/13 0:14			.03	.026	mg/L				14.3	20	RA
WG356391ICV	ICV	12/14/13 13:07	WI131104-3	.65228		.669	mg/L	102.6	90	110			
WG356391ICB	ICB	12/14/13 13:09				U	mg/L		-0.03	0.03			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	99.94539	5.7	108	mg/L	102.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	99.94539	5.7	108.4	mg/L	102.8	85	115	0.37	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	99.94539	3.1	105.6	mg/L	102.6	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	99.94539	3.1	104.6	mg/L	101.6	85	115	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	99.94539	4.2	104.7	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	99.94539	4.2	104.5	mg/L	100.4	70	130	0.19	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356084													
WG356084PBW	PBW	12/07/13 13:13				U	mg/L		-20	20			
WG356084LCSW	LCSW	12/07/13 13:15	PCN44260	260		248	mg/L	95.4	80	120			
L15847-06DUP	DUP	12/07/13 14:13			150	152	mg/L				1.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356134													
WG356134PBW	PBW	12/09/13 15:33				U	mg/L		-15	15			
WG356134LCSW	LCSW	12/09/13 15:35	PCN44259	160		156	mg/L	97.5	80	120			
L15826-01DUP	DUP	12/09/13 16:04			U	U	mg/L				0	10	RA
L15891-01DUP	DUP	12/09/13 16:33			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	1.0009	U	1.06	mg/L	105.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0009	U	1.09	mg/L	108.9	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0009	U	1.08	mg/L	107.9	85	115	0.92	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0009	U	1.07	mg/L	106.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05222	mg/L	104.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.05033	mg/L	100.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	.0008	.05773	mg/L	113.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	.0008	.05694	mg/L	112.2	70	130	1.38	20	
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.05177	mg/L	103.5	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0003	0.0003			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.0519	mg/L	103.7	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0008	.05904	mg/L	116.4	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0008	.05961	mg/L	117.5	70	130	0.96	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05174	mg/L	103.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05615	mg/L	112.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	.0042	.05575	mg/L	103	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	.0042	.0559	mg/L	103.3	70	130	0.27	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.02002		.02056	mg/L	102.7	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.00015	0.00015			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.01001		.009074	mg/L	90.6	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.01001	U	.007763	mg/L	77.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.01001	U	.007239	mg/L	72.3	70	130	6.99	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.02002		.02012	mg/L	100.5	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.00015	0.00015			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00011	0.00011			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.01001		.009909	mg/L	99	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.01001	U	.009672	mg/L	96.6	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.01001	U	.009571	mg/L	95.6	70	130	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	100.0204	283	374.4	mg/L	91.4	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	100.0204	283	375.5	mg/L	92.5	85	115	0.29	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	100.0204	14.1	116.3	mg/L	102.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	100.0204	14.1	115.4	mg/L	101.3	85	115	0.78	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	100.0204	38	138.4	mg/L	100.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	100.0204	38	138.9	mg/L	100.9	70	130	0.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	3.47	3.827	mg/L	71.4	85	115			M3
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	3.47	3.844	mg/L	74.8	85	115	0.44	20	M3
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.24	.747	mg/L	101.4	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.24	.737	mg/L	99.4	85	115	1.35	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.23	.722	mg/L	98.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.23	.726	mg/L	99.2	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			
L15825-03DUP	DUP	12/13/13 20:30			39.8	39.9	mg/L				0.3	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	43.7	75.2	mg/L	105	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05257	mg/L	105.1	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04963	mg/L	99.2	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05338	mg/L	106.7	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.05376	mg/L	107.4	70	130	0.71	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05285	mg/L	105.7	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05155	mg/L	103	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.0517	mg/L	103.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.05138	mg/L	102.7	70	130	0.62	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05015		.05337	mg/L	106.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05005		.04553	mg/L	91	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05005	U	.05284	mg/L	105.6	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05005	U	.04659	mg/L	93.1	70	130	12.57	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05015		.05215	mg/L	104	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05005		.05058	mg/L	101.1	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05005	U	.0572	mg/L	114.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05005	U	.06242	mg/L	124.7	70	130	8.73	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.999	.01	1.028	mg/L	101.9	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.999	.01	1.035	mg/L	102.6	85	115	0.68	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	.999	U	1.046	mg/L	104.7	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.999	U	1.037	mg/L	103.8	85	115	0.86	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.999	U	1.015	mg/L	101.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.999	U	1.019	mg/L	102	70	130	0.39	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356370													
WG356370ICV	ICV	12/12/13 21:20	MS131202-2	.05		.05122	mg/L	102.4	90	110			
WG356370ICB	ICB	12/12/13 21:24				U	mg/L		-0.0003	0.0003			
WG356370LFB	LFB	12/12/13 21:27	MS131118-2	.05		.04838	mg/L	96.8	85	115			
L15825-03AS	AS	12/12/13 21:47	MS131118-2	.05	.0018	.05441	mg/L	105.2	70	130			
L15825-03ASD	ASD	12/12/13 21:51	MS131118-2	.05	.0018	.05513	mg/L	106.7	70	130	1.31	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.05322	mg/L	106.4	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0003	0.0003			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00022	0.00022			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.05		.05309	mg/L	106.2	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.05	.0048	.05896	mg/L	108.3	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.05	.0048	.05909	mg/L	108.6	70	130	0.22	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356429													
WG356429ICV	ICV	12/16/13 23:32	MS131202-2	.05		.04839	mg/L	96.8	90	110			
WG356429ICB	ICB	12/16/13 23:35				U	mg/L		-0.0006	0.0006			
WG356429LFB	LFB	12/16/13 23:39	MS131216-2	.05005		.05178	mg/L	103.5	85	115			
L15825-03AS	AS	12/16/13 23:59	MS131216-2	.05005	.0051	.05652	mg/L	102.7	70	130			
L15825-03ASD	ASD	12/17/13 0:03	MS131216-2	.05005	.0051	.05781	mg/L	105.3	70	130	2.26	20	

SPF Water Engineering

ACZ Project ID: ***L15826***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356511													
WG356511ICV	ICV	12/16/13 21:35	MS131202-2	.05		.04993	mg/L	99.9	90	110			
WG356511ICB	ICB	12/16/13 21:38				U	mg/L		-0.0006	0.0006			
WG356452LRB	LRB	12/16/13 21:42				U	mg/L		-0.00044	0.00044			
WG356452LFB	LFB	12/16/13 21:45	MS131118-2	.0501		.05306	mg/L	105.9	85	115			
L15826-01LFM	LFM	12/16/13 23:09	MS131118-2	.0501	.0436	.09672	mg/L	106	70	130			
L15826-01LFMD	LFMD	12/16/13 23:12	MS131118-2	.0501	.0436	.09635	mg/L	105.3	70	130	0.38	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15822-01AS	AS	12/04/13 23:55	II131119-3	.5	.48	.949	mg/L	95.8	85	115			
L15822-01ASD	ASD	12/04/13 23:58	II131119-3	.5	.48	.95	mg/L	96	85	115	0.11	20	
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.07	.576	mg/L	101.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.07	.566	mg/L	99.2	85	115	1.75	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.13	.627	mg/L	101.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.13	.635	mg/L	103	70	130	1.27	20	

SPF Water Engineering ACZ Project ID: ***L15826***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15826-01	WG355879	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356084	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L15826***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15826-02	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356068	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356070	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356084	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356134	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15826
Date Received: 12/02/2013 10:07
Received By: mtb
Date Printed: 12/2/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?		X	

The sample matrix was entered per the requested quotation.

7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L15826-01 : Mercury containers were single bagged.

L15826-02 : Mercury containers were single bagged.

16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
2802	8.9	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID:	L15826
Date Received:	12/02/2013 10:07
Received By:	mtb
Date Printed:	12/2/2013

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L15826

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Twin Springs North	11/22/13 14:20		8	X							
Twin Springs South	11/22/13 15:00		8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	11/23/13 7:00		
		11/12-2/13 10:07	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15826 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 20, 2013

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15834

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 03, 2013. This project has been assigned to ACZ's project number, L15834. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L15834. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 19, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

December 20, 2013

Project ID: Calico 4th Quarter sampling
ACZ Project ID: L15834

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 1 ground water sample from SPF Water Engineering on December 3, 2013. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L15834. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

This sample was analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L15834. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BISHOP

ACZ Sample ID: ***L15834-01***
Date Sampled: *11/25/13 11:35*
Date Received: *12/03/13*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/06/13 16:15	mpb
Cyanide, WAD	SM4500-CN I- distillation								12/06/13 12:00	jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/12/13 16:14	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								12/16/13 10:55	scp
Total Hot Plate Digestion	M200.2 ICP								12/11/13 14:03	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BISHOP

ACZ Sample ID: ***L15834-01***
Date Sampled: *11/25/13 11:35*
Date Received: *12/03/13*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/05/13 0:40	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	12/11/13 21:57	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/16/13 22:58	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/17/13 0:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0079			mg/L	0.0002	0.001	12/16/13 22:58	msh
Arsenic, total	M200.8 ICP-MS	1	0.0081			mg/L	0.0002	0.001	12/17/13 0:20	pmc
Barium, dissolved	M200.7 ICP	1	0.021			mg/L	0.003	0.02	12/05/13 0:40	jjc
Barium, total	M200.7 ICP	1	0.022			mg/L	0.003	0.02	12/11/13 21:57	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	12/18/13 10:03	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:20	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/05/13 10:50	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/12/13 17:44	jjc
Boron, dissolved	M200.7 ICP	1	0.22			mg/L	0.01	0.05	12/05/13 0:40	jjc
Boron, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	12/11/13 21:57	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:58	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:20	pmc
Calcium, dissolved	M200.7 ICP	1	4.6			mg/L	0.2	1	12/05/13 0:40	jjc
Calcium, total	M200.7 ICP	1	5			mg/L	0.2	1	12/11/13 21:57	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/16/13 22:58	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/17/13 0:20	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	12/16/13 22:58	msh
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	12/17/13 0:20	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/16/13 22:58	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	12/17/13 0:20	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:40	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:57	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/05/13 0:40	jjc
Iron, total	M200.7 ICP	1	0.03	B		mg/L	0.02	0.05	12/11/13 21:57	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/16/13 22:58	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/17/13 0:20	pmc
Lithium, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.1	12/05/13 0:40	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.02	0.1	12/11/13 21:57	jjc
Magnesium, dissolved	M200.7 ICP	1	1			mg/L	0.2	1	12/05/13 0:40	jjc
Magnesium, total	M200.7 ICP	1	1.2			mg/L	0.2	1	12/11/13 21:57	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0059		*	mg/L	0.0005	0.003	12/18/13 10:03	msh
Manganese, total	M200.8 ICP-MS	1	0.0066			mg/L	0.0005	0.003	12/17/13 0:20	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	12/11/13 12:37	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	12/10/13 14:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0080			mg/L	0.0005	0.003	12/18/13 10:03	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	12/17/13 0:20	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/16/13 22:58	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/17/13 0:20	pmc
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.3	2	12/05/13 0:40	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BISHOP

ACZ Sample ID: ***L15834-01***
Date Sampled: *11/25/13 11:35*
Date Received: *12/03/13*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.3	2	12/11/13 21:57	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/05/13 0:40	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/11/13 21:57	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/16/13 22:58	msh
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/17/13 0:20	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/16/13 22:58	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/17/13 0:20	pmc
Sodium, dissolved	M200.7 ICP	1	84.2			mg/L	0.3	2	12/05/13 0:40	jjc
Sodium, total	M200.7 ICP	1	82.1			mg/L	0.3	2	12/11/13 21:57	jjc
Strontium, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	12/05/13 0:40	jjc
Strontium, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	12/11/13 21:57	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/16/13 22:58	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/17/13 0:20	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/16/13 22:58	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/17/13 0:20	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/05/13 0:40	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/11/13 21:57	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	12/16/13 22:58	msh
Uranium, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	12/17/13 0:20	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0002	0.001	12/16/13 22:58	msh
Vanadium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0002	0.001	12/17/13 0:20	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/05/13 0:40	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/11/13 21:57	jjc

SPF Water Engineering
Project ID: Calico 4th Quarter sampling
Sample ID: BISHOP

ACZ Sample ID: ***L15834-01***
Date Sampled: *11/25/13 11:35*
Date Received: *12/03/13*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	166		*	mg/L	2	20	12/08/13 0:00	khw
Carbonate as CaCO3		1	4	B	*	mg/L	2	20	12/08/13 0:00	khw
Hydroxide as CaCO3		1		U	*	mg/L	2	20	12/08/13 0:00	khw
Total Alkalinity		1	170		*	mg/L	2	20	12/08/13 0:00	khw
Chloride	M300.0 - Ion Chromatography	1	8.51		*	mg/L	0.5	2.5	12/13/13 22:17	tcd
Conductivity @25C	SM2510B	1	388		*	umhos/cm	1	10	12/08/13 1:18	khw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 2:15	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/07/13 1:40	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.69		*	mg/L	0.1	0.5	12/13/13 22:17	tcd
Hardness as CaCO3	SM2340B - Calculation		16			mg/L	1	7	12/20/13 11:59	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.30		*	mg/L	0.02	0.1	12/12/13 23:38	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	12/12/13 15:31	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H	*	units	0.1	0.1	12/08/13 0:00	khw
pH measured at		1	21		*	C	0.1	0.1	12/08/13 0:00	khw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.13		*	mg/L	0.01	0.05	12/13/13 0:23	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	250	H	*	mg/L	10	20	12/03/13 16:54	dcw
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	12/06/13 15:30	id
Sulfate	M300.0 - Ion Chromatography	1	26.2		*	mg/L	0.5	2.5	12/13/13 22:17	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L15834***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078PBW1	PBW	12/07/13 15:04				6.9	mg/L		-20	20			
WG356078LCSW2	LCSW	12/07/13 15:17	WC131126-	820.0001		777.5	mg/L	94.8	90	110			
WG356078LCSW5	LCSW	12/07/13 18:20	WC131126-	820.0001		797.9	mg/L	97.3	90	110			
WG356078PBW2	PBW	12/07/13 18:28				3.1	mg/L		-20	20			
WG356078LCSW8	LCSW	12/07/13 21:31	WC131126-	820.0001		787.5	mg/L	96	90	110			
WG356078PBW3	PBW	12/07/13 21:39				2.3	mg/L		-20	20			
WG356078LCSW11	LCSW	12/08/13 1:00	WC131126-	820.0001		794.3	mg/L	96.9	90	110			
WG356078PBW4	PBW	12/08/13 1:09				2.5	mg/L		-20	20			
L15893-01DUP	DUP	12/08/13 2:37			283	284.2	mg/L				0.4	20	
WG356078LCSW14	LCSW	12/08/13 4:26	WC131126-	820.0001		813.1	mg/L	99.2	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.976	mg/L	98.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.09	0.09			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0011		1.081	mg/L	108	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0011	U	1.099	mg/L	109.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0011	U	1.089	mg/L	108.8	85	115	0.91	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.983	mg/L	99.2	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.09	0.09			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.066	0.066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0011		1.045	mg/L	104.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0011	U	1.055	mg/L	105.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0011	U	1.063	mg/L	106.2	70	130	0.76	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.02		.02067	mg/L	103.4	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0012	0.0012			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.01		.01025	mg/L	102.5	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.05	U	.0523	mg/L	104.6	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.05	U	.0524	mg/L	104.8	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02		.02061	mg/L	103.1	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0012	0.0012			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00088	0.00088			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.01		.01099	mg/L	109.9	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.01	U	.01138	mg/L	113.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.01	U	.01114	mg/L	111.4	70	130	2.13	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.05141	mg/L	102.8	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0006	0.0006			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.0501		.04788	mg/L	95.6	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.2505	U	.2715	mg/L	108.4	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.2505	U	.2694	mg/L	107.5	70	130	0.78	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.0538	mg/L	107.6	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0006	0.0006			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00044	0.00044			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05072	mg/L	101.3	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0006	.05178	mg/L	102.3	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0006	.05189	mg/L	102.5	70	130	0.21	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.946	mg/L	97.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				.0054	mg/L		-0.009	0.009			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.5042	mg/L	100.8	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.052	.557	mg/L	101	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.052	.5425	mg/L	98.1	85	115	2.64	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9665	mg/L	98.3	95	105			
WG356298ICB	ICB	12/11/13 20:28				.003	mg/L		-0.009	0.009			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.0066	0.0066			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.5008	mg/L	100.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.067	.5702	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.067	.5698	mg/L	100.6	70	130	0.07	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356538													
WG356538ICV	ICV	12/18/13 9:29	MS131202-2	.05		.05046	mg/L	100.9	90	110			
WG356538ICB	ICB	12/18/13 9:32				U	mg/L		-0.00015	0.00015			
WG356538LFB	LFB	12/18/13 9:36	MS131217-2	.05005		.04525	mg/L	90.4	85	115			
L15897-01AS	AS	12/18/13 10:17	MS131217-2	.05005	U	.03076	mg/L	61.5	70	130			M2
L15897-01ASD	ASD	12/18/13 10:20	MS131217-2	.05005	U	.02851	mg/L	57	70	130	7.59	20	M2

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.04704	mg/L	94.1	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.04662	mg/L	93.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	U	.04772	mg/L	95.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	U	.0468	mg/L	93.4	70	130	1.95	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355919													
WG355919ICV	ICV	12/05/13 9:28	II131113-1	2		1.983	mg/L	99.2	95	105			
WG355919ICB	ICB	12/05/13 9:34				U	mg/L		-0.12	0.12			
WG355919LFB	LFB	12/05/13 9:47	II131119-3	1		1.014	mg/L	101.4	85	115			
L15825-03AS	AS	12/05/13 10:38	II131119-3	1	U	.98	mg/L	98	85	115			
L15825-03ASD	ASD	12/05/13 10:41	II131119-3	1	U	1.044	mg/L	104.4	85	115	6.32	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356349													
WG356349ICV	ICV	12/12/13 16:08	II131111-1	2		2	mg/L	100	95	105			
WG356349ICB	ICB	12/12/13 16:14				U	mg/L		-0.12	0.12			
WG356232LRB	LRB	12/12/13 16:26				U	mg/L		-0.088	0.088			
WG356232LFB	LFB	12/12/13 16:30	II131209-3	1		1.07	mg/L	107	85	115			
L15825-01LFM	LFM	12/12/13 17:19	II131209-3	1	U	1.124	mg/L	112.4	70	130			
L15825-01LFMD	LFMD	12/12/13 17:22	II131209-3	1	U	1.111	mg/L	111.1	70	130	1.16	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		2.013	mg/L	100.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5005		.522	mg/L	104.3	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5005	U	.536	mg/L	107.1	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5005	U	.527	mg/L	105.3	85	115	1.69	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.997	mg/L	99.9	95	105			
WG356298ICB	ICB	12/11/13 20:28				.011	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5005		.509	mg/L	101.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5005	.12	.629	mg/L	101.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5005	.12	.63	mg/L	101.9	70	130	0.16	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.04602	mg/L	92	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.0501		.04598	mg/L	91.8	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.2505	U	.22735	mg/L	90.8	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.2505	U	.2253	mg/L	89.9	70	130	0.91	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05145	mg/L	102.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.0516	mg/L	103	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	U	.05133	mg/L	102.5	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	U	.05037	mg/L	100.5	70	130	1.89	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		97.86	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	68.00225		71.01	mg/L	104.4	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	68.00225	15.5	87.01	mg/L	105.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	68.00225	15.5	85.84	mg/L	103.4	85	115	1.35	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.37	mg/L	98.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	68.00225		69.75	mg/L	102.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	68.00225	32	103.2	mg/L	104.7	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	68.00225	32	103.8	mg/L	105.6	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	19.98		19.7	mg/L	98.6	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		32.1	mg/L	107	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		32.1	mg/L	107	90	110			
L15825-03DUP	DUP	12/13/13 20:30			10.3	10.3	mg/L				0	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	8.72	41.1	mg/L	107.9	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.0476	mg/L	95.2	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0015	0.0015			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04601	mg/L	91.9	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	U	.2368	mg/L	94.6	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	U	.2359	mg/L	94.3	70	130	0.38	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05034	mg/L	100.7	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05045	mg/L	100.8	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	U	.04896	mg/L	97.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	U	.04865	mg/L	97.2	70	130	0.64	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.04972	mg/L	99.4	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.00015	0.00015			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.05105	mg/L	102	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	.0054	.2623	mg/L	102.7	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	.0054	.25475	mg/L	99.6	70	130	2.92	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.04871	mg/L	97.4	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05064	mg/L	101.2	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.00019	.05036	mg/L	100.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.00019	.04972	mg/L	99	70	130	1.28	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW1	LCSW	12/07/13 15:05	PCN42442	1408.8		1436.6	umhos/cm	102	90	110			
WG356078LCSW4	LCSW	12/07/13 18:08	PCN42442	1408.8		1412	umhos/cm	100.2	90	110			
WG356078LCSW7	LCSW	12/07/13 21:19	PCN42442	1408.8		1398.6	umhos/cm	99.3	90	110			
WG356078LCSW10	LCSW	12/08/13 0:48	PCN42442	1408.8		1384.2	umhos/cm	98.3	90	110			
L15893-01DUP	DUP	12/08/13 2:37			1840	1833	umhos/cm				0.4	20	
WG356078LCSW13	LCSW	12/08/13 4:13	PCN42442	1408.8		1377.1	umhos/cm	97.7	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.04688	mg/L	93.8	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0015	0.0015			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.0445	mg/L	88.9	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	.006	.2262	mg/L	88	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	.006	.2234	mg/L	86.9	70	130	1.25	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05115	mg/L	102.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05128	mg/L	102.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0085	.05604	mg/L	95	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0085	.0557	mg/L	94.3	70	130	0.61	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356074													
WG356038LRB	LRB	12/07/13 1:49				U	mg/L		-0.003	0.003			
WG356038LFB	LFB	12/07/13 1:50	WI131202-2	.2		.2005	mg/L	100.3	90	110			
L15768-03DUP	DUP	12/07/13 2:04			U	U	mg/L				0	20	RA
L15777-01LFM	LFM	12/07/13 2:06	WI131202-2	.2	U	.2018	mg/L	100.9	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356072													
WG356072ICV	ICV	12/07/13 1:13	WI131202-6	.3		.2972	mg/L	99.1	90	110			
WG356072ICB	ICB	12/07/13 1:14				U	mg/L		-0.003	0.003			
WG356008LRB	LRB	12/07/13 1:15				U	mg/L		-0.003	0.003			
WG356008LFB	LFB	12/07/13 1:16	WI131202-4	.2		.2011	mg/L	100.6	90	110			
L15820-01DUP	DUP	12/07/13 1:30			U	U	mg/L				0	20	RA
L15820-02LFM	LFM	12/07/13 1:31	WI131202-4	.2	U	.1912	mg/L	95.6	90	110			

SPF Water Engineering

ACZ Project ID: ***L15834***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	4.004		4.21	mg/L	105.1	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-0.3	0.3			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	1.5		1.62	mg/L	108	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	1.5		1.61	mg/L	107.3	90	110			
L15825-03DUP	DUP	12/13/13 20:30			1.44	1.45	mg/L				0.7	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	1.5	.6	2.25	mg/L	110	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.94	mg/L	97	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.001		1.03	mg/L	102.9	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.001	U	1.06	mg/L	105.9	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.001	U	1.03	mg/L	102.9	85	115	2.87	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.97	mg/L	98.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.001		1.04	mg/L	103.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.001	U	1.03	mg/L	102.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.001	U	1.05	mg/L	104.9	70	130	1.92	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.998	mg/L	99.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0014		1.055	mg/L	105.4	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0014	.03	1.069	mg/L	104.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0014	.03	1.033	mg/L	101.2	85	115	3.43	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.987	mg/L	99.4	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0014		1.055	mg/L	105.4	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0014	U	1.041	mg/L	104	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0014	U	1.032	mg/L	103.1	70	130	0.87	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.05032	mg/L	100.6	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04814	mg/L	96.2	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	U	.25205	mg/L	100.7	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	U	.248	mg/L	99.1	70	130	1.62	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05165	mg/L	103.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05032	mg/L	100.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0002	.05077	mg/L	101	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0002	.05029	mg/L	100.1	70	130	0.95	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.934	mg/L	96.7	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.06	0.06			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1		.989	mg/L	98.9	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	1	.02	1.008	mg/L	98.8	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1	.02	1.001	mg/L	98.1	85	115	0.7	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.933	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.06	0.06			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.044	0.044			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1		.97	mg/L	97	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1	U	1	mg/L	100	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1	U	1	mg/L	100	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		96.56	mg/L	96.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.6	0.6			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	49.99695		50.04	mg/L	100.1	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	49.99695	6.2	56.8	mg/L	101.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	49.99695	6.2	55.94	mg/L	99.5	85	115	1.53	20	

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ACZ Project ID: ***L15834***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		96.73	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.6	0.6			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.44	0.44			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	49.99695		49.28	mg/L	98.6	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	49.99695	8.4	58.18	mg/L	99.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	49.99695	8.4	58.08	mg/L	99.4	70	130	0.17	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356538													
WG356538ICV	ICV	12/18/13 9:29	MS131202-2	.05		.05232	mg/L	104.6	90	110			
WG356538ICB	ICB	12/18/13 9:32				U	mg/L		-0.0015	0.0015			
WG356538LFB	LFB	12/18/13 9:36	MS131217-2	.0501		.04993	mg/L	99.7	85	115			
L15897-01AS	AS	12/18/13 10:17	MS131217-2	.0501	U	.07194	mg/L	143.6	70	130			M1
L15897-01ASD	ASD	12/18/13 10:20	MS131217-2	.0501	U	.07536	mg/L	150.4	70	130	4.64	20	M1

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05168	mg/L	103.4	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05133	mg/L	102.6	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0125	.06306	mg/L	101	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0125	.06218	mg/L	99.3	70	130	1.41	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356245													
WG356245CCV1	CCV	12/11/13 11:36	HG131206-4	10		8.95	ng/L	89.5	76.5	123.4			
WG356245CCB1	CCB	12/11/13 11:41				U	ng/L		-0.5	0.5			
WG356245PQV	PQV	12/11/13 11:46	HG131206-5	.5		.48	ng/L	96	70	130			
WG356245LFB	LFB	12/11/13 11:51	HG131206-6	2		1.96	ng/L	98	71	125			
L15825-01MS	MS	12/11/13 12:06	HG131206-6	2	U	2.23	ng/L	111.5	71	125			
L15825-01MSD	MSD	12/11/13 12:11	HG131206-6	2	U	2.12	ng/L	106	71	125	5.06	24	
WG356245CCV2	CCV	12/11/13 12:42	HG131206-4	10		9.41	ng/L	94.1	76.5	123.4			
WG356245CCB2	CCB	12/11/13 12:47				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L15834***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356009													
WG356009ICV	ICV	12/06/13 10:12	HG131206-4	10		10.3	ng/L	103	79	121			
WG356009ICB	ICB	12/06/13 10:17				U	ng/L		-0.5	0.5			
WG356150													
WG356150CCV1	CCV	12/10/13 11:39	HG131206-4	10		11.2	ng/L	112	76.5	123.4			
WG356150CCB1	CCB	12/10/13 11:45				U	ng/L		-0.5	0.5			
WG356150PQV	PQV	12/10/13 11:50	HG131206-5	.5		.51	ng/L	102	70	130			
WG356150LFB	LFB	12/10/13 11:55	HG131206-6	2		1.95	ng/L	97.5	71	125			
WG356150CCV2	CCV	12/10/13 13:45	HG131206-4	10		11.5	ng/L	115	76.5	123.4			
WG356150CCB2	CCB	12/10/13 13:51				U	ng/L		-0.5	0.5			
WG356150CCV3	CCV	12/10/13 14:36	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB3	CCB	12/10/13 14:41				U	ng/L		-0.5	0.5			
L15842-01MS	MS	12/10/13 14:56	HG2XPREP	8	.7	5	ng/L	107.6	71	125			
L15842-01MSD	MSD	12/10/13 15:01	HG2XPREP	8	.7	5.02	ng/L	108.1	71	125	0.4	24	
WG356150CCV4	CCV	12/10/13 15:17	HG131206-4	10		11	ng/L	110	76.5	123.4			
WG356150CCB4	CCB	12/10/13 15:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356538													
WG356538ICV	ICV	12/18/13 9:29	MS131202-2	.02006		.01869	mg/L	93.2	90	110			
WG356538ICB	ICB	12/18/13 9:32				U	mg/L		-0.0015	0.0015			
WG356538LFB	LFB	12/18/13 9:36	MS131217-2	.05		.04755	mg/L	95.1	85	115			
L15897-01AS	AS	12/18/13 10:17	MS131217-2	.05	.1705	.226	mg/L	111	70	130			
L15897-01ASD	ASD	12/18/13 10:20	MS131217-2	.05	.1705	.2273	mg/L	113.6	70	130	0.57	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02006		.01932	mg/L	96.3	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0015	0.0015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.0011	0.0011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05		.05032	mg/L	100.6	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05	.0013	.05307	mg/L	103.5	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05	.0013	.05298	mg/L	103.4	70	130	0.17	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.04732	mg/L	94.6	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0018	0.0018			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04529	mg/L	90.5	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	.013	.238	mg/L	89.9	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	.013	.2372	mg/L	89.6	70	130	0.34	20	

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ACZ Project ID: ***L15834***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.0505	mg/L	101	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0018	0.0018			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00132	0.00132			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.04981	mg/L	99.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0021	.04865	mg/L	93	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0021	.04816	mg/L	92	70	130	1.01	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356380													
WG356380ICV	ICV	12/12/13 18:32	WI131015-1	2.416		2.422	mg/L	100.2	90	110			
WG356380ICB	ICB	12/12/13 18:33				U	mg/L		-0.06	0.06			
WG356389													
WG356389LFB1	LFB	12/12/13 23:03	WI130816-3	2		2.046	mg/L	102.3	90	110			
WG356389LFB2	LFB	12/12/13 23:37	WI130816-3	2		1.982	mg/L	99.1	90	110			
L15834-01DUP	DUP	12/12/13 23:40			.3	.304	mg/L				1.3	20	
L15834-01AS	AS	12/12/13 23:41	WI130816-3	2	.3	2.168	mg/L	93.4	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356333													
WG356333ICV	ICV	12/12/13 12:20	WI131021-1	1.003		.974	mg/L	97.1	90	110			
WG356333ICB	ICB	12/12/13 12:23				U	mg/L		-0.15	0.15			
WG356360													
WG356360LFB1	LFB	12/12/13 15:15	WI121218-3	1		1.006	mg/L	100.6	90	110			
L15834-01AS	AS	12/12/13 15:32	WI121218-3	1	U	1.03	mg/L	103	90	110			
L15848-01DUP	DUP	12/12/13 15:34			U	U	mg/L				0	20	RA
WG356360LFB2	LFB	12/12/13 15:46	WI121218-3	1		1.017	mg/L	101.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356078													
WG356078LCSW3	LCSW	12/07/13 15:20	PCN41777	6		6.03	units	100.5	5.9	6.1			
WG356078LCSW6	LCSW	12/07/13 18:23	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW9	LCSW	12/07/13 21:34	PCN41777	6		6.05	units	100.8	5.9	6.1			
WG356078LCSW12	LCSW	12/08/13 1:04	PCN41777	6		6.05	units	100.8	5.9	6.1			
L15893-01DUP	DUP	12/08/13 2:37			8	7.99	units				0.1	20	
WG356078LCSW15	LCSW	12/08/13 4:29	PCN41777	6		6.06	units	101	5.9	6.1			

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ACZ Project ID: ***L15834***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356387													
WG356387ICV	ICV	12/12/13 22:33	WI131104-3	.65228		.671	mg/L	102.9	90	110			
WG356387ICB	ICB	12/12/13 22:36				U	mg/L		-0.03	0.03			
WG356391													
WG356364LRB	LRB	12/13/13 0:09				U	mg/L		-0.03	0.03			
WG356364LFB	LFB	12/13/13 0:10	WI131206-2	.5		.508	mg/L	101.6	90	110			
L15824-01LFM	LFM	12/13/13 0:12	WI131206-2	.5	.03	.538	mg/L	101.6	90	110			
L15825-01DUP	DUP	12/13/13 0:14			.03	.026	mg/L				14.3	20	RA
WG356391ICV	ICV	12/14/13 13:07	WI131104-3	.65228		.669	mg/L	102.6	90	110			
WG356391ICB	ICB	12/14/13 13:09				U	mg/L		-0.03	0.03			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	20		19.57	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	99.94539		101.4	mg/L	101.5	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	99.94539	3.1	105.6	mg/L	102.6	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	99.94539	3.1	104.6	mg/L	101.6	85	115	0.95	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	20		19.75	mg/L	98.8	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	99.94539		98.98	mg/L	99	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	99.94539	4.2	104.7	mg/L	100.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	99.94539	4.2	104.5	mg/L	100.4	70	130	0.19	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355807													
WG355807PBW	PBW	12/03/13 16:30				U	mg/L		-20	20			
WG355807LCSW	LCSW	12/03/13 16:31	PCN44257	260		232	mg/L	89.2	80	120			
L15838-06DUP	DUP	12/03/13 17:04			1670	1658	mg/L				0.7	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356049													
WG356049PBW	PBW	12/06/13 15:07				U	mg/L		-15	15			
WG356049LCSW	LCSW	12/06/13 15:09	PCN44260	160		149	mg/L	93.1	80	120			
L15845-03DUP	DUP	12/06/13 15:38			309	319	mg/L				3.2	10	

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ACZ Project ID: ***L15834***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.99	mg/L	99.5	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.3	0.3			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	1.0009		1.08	mg/L	107.9	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	1.0009	U	1.09	mg/L	108.9	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	1.0009	U	1.08	mg/L	107.9	85	115	0.92	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		2	mg/L	100	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.3	0.3			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.22	0.22			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	1.0009		1.06	mg/L	105.9	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	1.0009	U	1.07	mg/L	106.9	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.05145	mg/L	102.9	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04797	mg/L	95.8	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	.2685	.53	mg/L	104.5	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	.2685	.5265	mg/L	103.1	70	130	0.66	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05208	mg/L	104.2	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05159	mg/L	103.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0004	.05103	mg/L	101.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0004	.05062	mg/L	100.3	70	130	0.81	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.02002		.01853	mg/L	92.6	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.00015	0.00015			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.01001		.008959	mg/L	89.5	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.05005	U	.03867	mg/L	77.3	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.05005	U	.03879	mg/L	77.5	70	130	0.31	20	

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ACZ Project ID: ***L15834***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.02002		.02056	mg/L	102.7	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.00015	0.00015			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00011	0.00011			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.01001		.009932	mg/L	99.2	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.01001	U	.009523	mg/L	95.1	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.01001	U	.009342	mg/L	93.3	70	130	1.92	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	100		98.33	mg/L	98.3	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.9	0.9			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	100.0204		101.8	mg/L	101.8	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	100.0204	14.1	116.3	mg/L	102.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	100.0204	14.1	115.4	mg/L	101.3	85	115	0.78	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	100		98.59	mg/L	98.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.9	0.9			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.66	0.66			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	100.0204		98.68	mg/L	98.7	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	100.0204	38	138.4	mg/L	100.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	100.0204	38	138.9	mg/L	100.9	70	130	0.36	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.996	mg/L	99.8	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.507	mg/L	101.4	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.24	.747	mg/L	101.4	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.24	.737	mg/L	99.4	85	115	1.35	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.989	mg/L	99.5	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.489	mg/L	97.8	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.23	.722	mg/L	98.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.23	.726	mg/L	99.2	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG354166													
WG354166ICV	ICV	10/31/13 17:04	WI131018-1	49.95		49.8	mg/L	99.7	90	110			
WG354166ICB	ICB	10/31/13 17:21				U	mg/L		-1.5	1.5			
WG356398													
WG356398LFB1	LFB	12/13/13 11:15	WI131011-1	30		31.9	mg/L	106.3	90	110			
WG356398LFB2	LFB	12/13/13 19:54	WI131011-1	30		31.8	mg/L	106	90	110			
L15825-03DUP	DUP	12/13/13 20:30			39.8	39.9	mg/L				0.3	20	
L15826-01AS	AS	12/13/13 21:42	WI131011-1	30	43.7	75.2	mg/L	105	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.05176	mg/L	103.5	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.0502		.04971	mg/L	99	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.251	U	.2689	mg/L	107.1	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.251	U	.26395	mg/L	105.2	70	130	1.86	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05395	mg/L	107.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05158	mg/L	103.1	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	U	.05214	mg/L	104.2	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	U	.05141	mg/L	102.7	70	130	1.41	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05015		.04741	mg/L	94.5	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04562	mg/L	91.1	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	.0006	.2407	mg/L	95.9	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	.0006	.23965	mg/L	95.5	70	130	0.44	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05015		.05263	mg/L	104.9	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05005		.05269	mg/L	105.3	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05005	.0002	.04817	mg/L	95.8	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05005	.0002	.04872	mg/L	96.9	70	130	1.14	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.9572	mg/L	97.9	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.015	0.015			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.999		1.037	mg/L	103.8	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	.999	U	1.046	mg/L	104.7	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.999	U	1.037	mg/L	103.8	85	115	0.86	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.9315	mg/L	96.6	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.015	0.015			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.011	0.011			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.999		1.004	mg/L	100.5	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.999	U	1.015	mg/L	101.6	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.999	U	1.019	mg/L	102	70	130	0.39	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.05134	mg/L	102.7	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0003	0.0003			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05		.04954	mg/L	99.1	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25	3.87	4.108	mg/L	95.2	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25	3.87	4.059	mg/L	75.6	70	130	1.2	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05275	mg/L	105.5	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0003	0.0003			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00022	0.00022			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.05		.05172	mg/L	103.4	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.05	.0005	.0542	mg/L	107.4	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.05	.0005	.05391	mg/L	106.8	70	130	0.54	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356369													
WG356369ICV	ICV	12/16/13 21:17	MS131202-2	.05		.04887	mg/L	97.7	90	110			
WG356369ICB	ICB	12/16/13 21:20				U	mg/L		-0.0006	0.0006			
WG356369LFB	LFB	12/16/13 21:23	MS131216-2	.05005		.04938	mg/L	98.7	85	115			
L15788-01AS	AS	12/16/13 22:17	MS131216-2	.25025	U	.2628	mg/L	105	70	130			
L15788-01ASD	ASD	12/16/13 22:21	MS131216-2	.25025	U	.2604	mg/L	104.1	70	130	0.92	20	

SPF Water Engineering

ACZ Project ID: ***L15834***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356512													
WG356512ICV	ICV	12/16/13 23:48	MS131202-2	.05		.05009	mg/L	100.2	90	110			
WG356512ICB	ICB	12/16/13 23:51				U	mg/L		-0.0006	0.0006			
WG356453LRB	LRB	12/16/13 23:54				U	mg/L		-0.00044	0.00044			
WG356453LFB	LFB	12/16/13 23:57	MS131118-2	.0501		.05237	mg/L	104.5	85	115			
L15832-01LFM	LFM	12/17/13 0:13	MS131118-2	.0501	.0002	.05227	mg/L	103.9	70	130			
L15832-01LFMD	LFMD	12/17/13 0:16	MS131118-2	.0501	.0002	.05216	mg/L	103.7	70	130	0.21	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG355879													
WG355879ICV	ICV	12/04/13 23:30	II131113-1	2		1.912	mg/L	95.6	95	105			
WG355879ICB	ICB	12/04/13 23:36				U	mg/L		-0.03	0.03			
WG355879LFB	LFB	12/04/13 23:49	II131119-3	.5		.506	mg/L	101.2	85	115			
L15846-01AS	AS	12/05/13 0:46	II131119-3	.5	.07	.576	mg/L	101.2	85	115			
L15846-01ASD	ASD	12/05/13 0:49	II131119-3	.5	.07	.566	mg/L	99.2	85	115	1.75	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG356298													
WG356298ICV	ICV	12/11/13 20:22	II131111-1	2		1.934	mg/L	96.7	95	105			
WG356298ICB	ICB	12/11/13 20:28				U	mg/L		-0.03	0.03			
WG356232LRB	LRB	12/11/13 20:40				U	mg/L		-0.022	0.022			
WG356232LFB	LFB	12/11/13 20:43	II131209-3	.5		.506	mg/L	101.2	85	115			
L15825-01LFM	LFM	12/11/13 21:33	II131209-3	.5	.13	.627	mg/L	101.4	70	130			
L15825-01LFMD	LFMD	12/11/13 21:36	II131209-3	.5	.13	.635	mg/L	103	70	130	1.27	20	

SPF Water Engineering ACZ Project ID: ***L15834***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L15834-01	WG356538	Beryllium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG356078	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356398	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG356074	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356072	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356398	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG356389	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG356360	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG356078	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG356391	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG355807	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG356049	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	Q6	Sample was received above recommended temperature.
	WG356398	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG356078	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 4th Quarter sampling

ACZ Project ID: L15834
Date Received: 12/03/2013 10:06
Received By: mtb
Date Printed: 12/3/2013

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
3631	7.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L15834

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 4th Quarter Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SPF-2014-GW							
Bishop	11/25/13 11:35	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed.

Cooler also contains two extra sets of bottles that were not used

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	12-3-13 17:00		
		KPC 12-3-13 10:06	

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L15834 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 01, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 1st Quarter 2
ACZ Project ID: L17275

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 19, 2014. This project has been assigned to ACZ's project number, L17275. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L17275. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 01, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

April 01, 2014

Project ID: Calico 1st Quarter 2
ACZ Project ID: L17275

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 15 ground water samples from SPF Water Engineering on March 19, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L17275. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L17275. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 1st Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L17275-01***
Date Sampled: *03/16/14 09:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 12:49	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 8:38	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 14:36	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:08	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 9:11	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L17275-01***
Date Sampled: *03/16/14 09:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 11:55	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:15	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 15:32	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:28	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0080			mg/L	0.0002	0.001	03/27/14 15:32	las
Arsenic, total	M200.8 ICP-MS	1	0.0071			mg/L	0.0002	0.001	03/28/14 0:28	pmc
Barium, dissolved	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	03/21/14 11:55	aeb
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	03/26/14 10:15	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:32	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:28	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 11:55	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:15	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	03/21/14 11:55	aeb
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	03/26/14 10:15	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:32	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:28	pmc
Calcium, dissolved	M200.7 ICP	1	45.2		*	mg/L	0.1	0.5	03/21/14 11:55	aeb
Calcium, total	M200.7 ICP	1	46			mg/L	0.1	0.5	03/26/14 10:15	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	03/27/14 15:32	las
Chromium, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.002	03/28/14 0:28	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00053			mg/L	0.00005	0.0003	03/27/14 15:32	las
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	03/28/14 0:28	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:32	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:28	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 11:55	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:15	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 11:55	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:15	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:32	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:28	pmc
Lithium, dissolved	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	03/21/14 11:55	aeb
Lithium, total	M200.7 ICP	1	0.021	B		mg/L	0.008	0.04	03/26/14 10:15	jjc
Magnesium, dissolved	M200.7 ICP	1	9.7			mg/L	0.2	1	03/21/14 11:55	aeb
Magnesium, total	M200.7 ICP	1	9.8			mg/L	0.2	1	03/26/14 10:15	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	03/27/14 15:32	las
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:28	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 12:55	las
Mercury, total	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	03/28/14 16:19	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	03/27/14 15:32	las
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	03/28/14 0:28	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:32	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:28	pmc
Potassium, dissolved	M200.7 ICP	1	4.8			mg/L	0.2	1	03/21/14 11:55	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L17275-01***
Date Sampled: *03/16/14 09:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.7			mg/L	0.2	1	03/26/14 10:15	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 11:55	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:15	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	03/27/14 15:32	las
Selenium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	03/28/14 0:28	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:32	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:28	pmc
Sodium, dissolved	M200.7 ICP	1	19.9			mg/L	0.2	1	03/21/14 11:55	aeb
Sodium, total	M200.7 ICP	1	20.5			mg/L	0.2	1	03/26/14 10:15	jjc
Strontium, dissolved	M200.7 ICP	1	0.201			mg/L	0.005	0.03	03/21/14 11:55	aeb
Strontium, total	M200.7 ICP	1	0.202			mg/L	0.005	0.03	03/26/14 10:15	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:32	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:28	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 15:32	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:28	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 11:55	aeb
Titanium, total	M200.7 ICP	1	0.009	B		mg/L	0.005	0.03	03/26/14 10:15	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	03/27/14 15:32	las
Uranium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	03/28/14 0:28	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0201			mg/L	0.0002	0.001	03/27/14 15:32	las
Vanadium, total	M200.8 ICP-MS	1	0.0197			mg/L	0.0002	0.001	03/28/14 0:28	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 11:55	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 10:15	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L17275-01***
Date Sampled: *03/16/14 09:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	128			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	128			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	9.71		*	mg/L	0.5	2.5	03/25/14 20:40	tcd
Conductivity @25C	SM2510B	1	383			umhos/cm	1	10	03/24/14 17:05	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:10	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:32	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.32	B	*	mg/L	0.1	0.5	03/25/14 20:40	tcd
Hardness as CaCO3	SM2340B - Calculation		153			mg/L	1	7	04/01/14 12:21	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	3.48			mg/L	0.02	0.1	03/27/14 23:34	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:37	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	19			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	03/28/14 0:11	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270			mg/L	10	20	03/20/14 12:43	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/21/14 12:45	enb
Sulfate	M300.0 - Ion Chromatography	1	15.6			mg/L	0.5	2.5	03/25/14 20:40	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L17275-02***
Date Sampled: *03/16/14 10:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 13:08	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 8:57	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 14:51	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:18	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 9:46	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L17275-02***
Date Sampled: *03/16/14 10:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 11:59	aeb
Aluminum, total	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	03/26/14 10:24	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 15:36	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:31	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0084			mg/L	0.0002	0.001	03/27/14 15:36	las
Arsenic, total	M200.8 ICP-MS	1	0.0073			mg/L	0.0002	0.001	03/28/14 0:31	pmc
Barium, dissolved	M200.7 ICP	1	0.028			mg/L	0.003	0.02	03/21/14 11:59	aeb
Barium, total	M200.7 ICP	1	0.030			mg/L	0.003	0.02	03/26/14 10:24	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:36	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:31	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 11:59	aeb
Bismuth, total	M200.7 ICP	1	0.04	B	*	mg/L	0.04	0.2	03/26/14 10:24	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	03/21/14 11:59	aeb
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	03/26/14 10:24	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:36	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:31	pmc
Calcium, dissolved	M200.7 ICP	1	46.3		*	mg/L	0.1	0.5	03/21/14 11:59	aeb
Calcium, total	M200.7 ICP	1	48			mg/L	0.1	0.5	03/26/14 10:24	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	03/27/14 15:36	las
Chromium, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.002	03/28/14 0:31	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	03/27/14 15:36	las
Cobalt, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	03/28/14 0:31	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:36	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:31	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 11:59	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:24	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 11:59	aeb
Iron, total	M200.7 ICP	1	0.06			mg/L	0.02	0.05	03/26/14 10:24	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:36	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:31	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	03/21/14 11:59	aeb
Lithium, total	M200.7 ICP	1	0.021	B		mg/L	0.008	0.04	03/26/14 10:24	jjc
Magnesium, dissolved	M200.7 ICP	1	13.7			mg/L	0.2	1	03/21/14 11:59	aeb
Magnesium, total	M200.7 ICP	1	14			mg/L	0.2	1	03/26/14 10:24	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:36	las
Manganese, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	03/28/14 0:31	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 13:00	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	03/28/14 16:24	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.003	03/27/14 15:36	las
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	03/28/14 0:31	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:36	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:31	pmc
Potassium, dissolved	M200.7 ICP	1	4			mg/L	0.2	1	03/21/14 11:59	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L17275-02***
Date Sampled: *03/16/14 10:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4			mg/L	0.2	1	03/26/14 10:24	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 11:59	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:24	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	03/27/14 15:36	las
Selenium, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	03/28/14 0:31	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:36	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:31	pmc
Sodium, dissolved	M200.7 ICP	1	18.1			mg/L	0.2	1	03/21/14 11:59	aeb
Sodium, total	M200.7 ICP	1	18.7			mg/L	0.2	1	03/26/14 10:24	jjc
Strontium, dissolved	M200.7 ICP	1	0.244			mg/L	0.005	0.03	03/21/14 11:59	aeb
Strontium, total	M200.7 ICP	1	0.245			mg/L	0.005	0.03	03/26/14 10:24	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:36	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:31	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 15:36	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:31	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 11:59	aeb
Titanium, total	M200.7 ICP	1	0.011	B		mg/L	0.005	0.03	03/26/14 10:24	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	03/27/14 15:36	las
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	03/28/14 0:31	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0204			mg/L	0.0002	0.001	03/27/14 15:36	las
Vanadium, total	M200.8 ICP-MS	1	0.0195			mg/L	0.0002	0.001	03/28/14 0:31	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 11:59	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 10:24	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L17275-02***
Date Sampled: *03/16/14 10:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	138			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	138			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	13.2		*	mg/L	0.5	2.5	03/25/14 20:58	tcd
Conductivity @25C	SM2510B	1	423			umhos/cm	1	10	03/24/14 17:14	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:12	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:34	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.38	B	*	mg/L	0.1	0.5	03/25/14 20:58	tcd
Hardness as CaCO3	SM2340B - Calculation		172			mg/L	1	7	04/01/14 12:22	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.99			mg/L	0.02	0.1	03/27/14 23:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:38	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	20			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	03/28/14 0:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	03/21/14 9:31	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/21/14 12:46	enb
Sulfate	M300.0 - Ion Chromatography	1	24.0			mg/L	0.5	2.5	03/25/14 20:58	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L17275-03***
Date Sampled: *03/16/14 11:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 13:27	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:07	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:06	mpb
Total Hot Plate Digestion	M200.2 ICP								03/25/14 9:57	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:27	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L17275-03***
Date Sampled: *03/16/14 11:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:02	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:27	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 15:39	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:35	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0396			mg/L	0.0002	0.001	03/27/14 15:39	las
Arsenic, total	M200.8 ICP-MS	1	0.0337			mg/L	0.0002	0.001	03/28/14 0:35	pmc
Barium, dissolved	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	03/21/14 12:02	aeb
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	03/26/14 10:27	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:39	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:35	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:02	aeb
Bismuth, total	M200.7 ICP	1	0.06	B	*	mg/L	0.04	0.2	03/26/14 10:27	jjc
Boron, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	03/21/14 12:02	aeb
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	03/26/14 10:27	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:39	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:35	pmc
Calcium, dissolved	M200.7 ICP	1	1		*	mg/L	0.1	0.5	03/21/14 12:02	aeb
Calcium, total	M200.7 ICP	1	1.1			mg/L	0.1	0.5	03/26/14 10:27	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 15:39	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 0:35	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:39	las
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:35	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:39	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:35	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:02	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:27	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:02	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:27	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:39	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:35	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	03/21/14 12:02	aeb
Lithium, total	M200.7 ICP	1	0.009	B		mg/L	0.008	0.04	03/26/14 10:27	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	03/21/14 12:02	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 10:27	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	03/27/14 15:39	las
Manganese, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	03/28/14 0:35	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 13:05	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	03/28/14 16:39	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0154			mg/L	0.0005	0.003	03/27/14 15:39	las
Molybdenum, total	M200.8 ICP-MS	1	0.0155			mg/L	0.0005	0.003	03/28/14 0:35	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:39	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:35	pmc
Potassium, dissolved	M200.7 ICP	1	5.5			mg/L	0.2	1	03/21/14 12:02	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L17275-03***
Date Sampled: *03/16/14 11:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.5			mg/L	0.2	1	03/26/14 10:27	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:02	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:27	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	03/27/14 15:39	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	03/28/14 0:35	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:39	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:35	pmc
Sodium, dissolved	M200.7 ICP	1	105			mg/L	0.2	1	03/21/14 12:02	aeb
Sodium, total	M200.7 ICP	1	111			mg/L	0.2	1	03/26/14 10:27	jjc
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:02	aeb
Strontium, total	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	03/26/14 10:27	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:39	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:35	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 15:39	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:35	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:02	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/26/14 10:27	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:39	las
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:35	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/27/14 15:39	las
Vanadium, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0002	0.001	03/28/14 0:35	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:02	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 10:27	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L17275-03***
Date Sampled: *03/16/14 11:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	98			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1	43			mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	141			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	9.12		*	mg/L	0.5	2.5	03/25/14 21:16	tcd
Conductivity @25C	SM2510B	1	496			umhos/cm	1	10	03/24/14 17:23	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:14	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:35	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.74		*	mg/L	0.1	0.5	03/25/14 21:16	tcd
Hardness as CaCO3	SM2340B - Calculation		3	B		mg/L	1	7	04/01/14 12:22	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/27/14 23:36	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:39	tcd
pH (lab)	SM4500H+ B									
pH		1	9.1	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	20			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	03/28/14 0:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	350			mg/L	10	20	03/21/14 9:33	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:10	dcw
Sulfate	M300.0 - Ion Chromatography	1	59.2			mg/L	0.5	2.5	03/25/14 21:16	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L17275-04***
Date Sampled: *03/16/14 12:35*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 13:37	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:16	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:14	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:37	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 10:09	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L17275-04***
Date Sampled: *03/16/14 12:35*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:05	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:30	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 15:42	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:38	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0301			mg/L	0.0002	0.001	03/27/14 15:42	las
Arsenic, total	M200.8 ICP-MS	1	0.0257			mg/L	0.0002	0.001	03/28/14 0:38	pmc
Barium, dissolved	M200.7 ICP	1	0.049			mg/L	0.003	0.02	03/21/14 12:05	aeb
Barium, total	M200.7 ICP	1	0.051			mg/L	0.003	0.02	03/26/14 10:30	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:42	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:38	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:05	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:30	jjc
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/21/14 12:05	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/26/14 10:30	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:42	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:38	pmc
Calcium, dissolved	M200.7 ICP	1	53.6		*	mg/L	0.1	0.5	03/21/14 12:05	aeb
Calcium, total	M200.7 ICP	1	55.7			mg/L	0.1	0.5	03/26/14 10:30	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 15:42	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 0:38	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00026	B		mg/L	0.00005	0.0003	03/27/14 15:42	las
Cobalt, total	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	03/28/14 0:38	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:42	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:38	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:05	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:30	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:05	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:30	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:42	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:38	pmc
Lithium, dissolved	M200.7 ICP	1	0.040			mg/L	0.008	0.04	03/21/14 12:05	aeb
Lithium, total	M200.7 ICP	1	0.046			mg/L	0.008	0.04	03/26/14 10:30	jjc
Magnesium, dissolved	M200.7 ICP	1	11.8			mg/L	0.2	1	03/21/14 12:05	aeb
Magnesium, total	M200.7 ICP	1	12			mg/L	0.2	1	03/26/14 10:30	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0033			mg/L	0.0005	0.003	03/27/14 15:42	las
Manganese, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	03/28/14 0:38	pmc
Mercury, total	M1631, Atomic Fluorescence	1	0.9			ng/L	0.2	0.5	03/28/14 16:44	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	03/27/14 15:42	las
Molybdenum, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	03/28/14 0:38	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:42	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:38	pmc
Potassium, dissolved	M200.7 ICP	1	4.3			mg/L	0.2	1	03/21/14 12:05	aeb
Potassium, total	M200.7 ICP	1	4.3			mg/L	0.2	1	03/26/14 10:30	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L17275-04***
Date Sampled: *03/16/14 12:35*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:05	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:30	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0060			mg/L	0.0001	0.0003	03/27/14 15:42	las
Selenium, total	M200.8 ICP-MS	1	0.0051			mg/L	0.0001	0.0003	03/28/14 0:38	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:42	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:38	pmc
Sodium, dissolved	M200.7 ICP	1	35.2			mg/L	0.2	1	03/21/14 12:05	aeb
Sodium, total	M200.7 ICP	1	37.1			mg/L	0.2	1	03/26/14 10:30	jjc
Strontium, dissolved	M200.7 ICP	1	0.251			mg/L	0.005	0.03	03/21/14 12:05	aeb
Strontium, total	M200.7 ICP	1	0.255			mg/L	0.005	0.03	03/26/14 10:30	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:42	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:38	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 15:42	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:38	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:05	aeb
Titanium, total	M200.7 ICP	1	0.009	B		mg/L	0.005	0.03	03/26/14 10:30	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0005	03/27/14 15:42	las
Uranium, total	M200.8 ICP-MS	1	0.0049			mg/L	0.0001	0.0005	03/28/14 0:38	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0332			mg/L	0.0002	0.001	03/27/14 15:42	las
Vanadium, total	M200.8 ICP-MS	1	0.0309			mg/L	0.0002	0.001	03/28/14 0:38	pmc
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/21/14 12:05	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	03/26/14 10:30	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L17275-04***
Date Sampled: *03/16/14 12:35*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	178			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	178			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	16.9			mg/L	0.5	2.5	03/25/14 21:52	tcd
Conductivity @25C	SM2510B	1	519			umhos/cm	1	10	03/24/14 17:33	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:15	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:35	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.44	B	*	mg/L	0.1	0.5	03/25/14 21:52	tcd
Hardness as CaCO3	SM2340B - Calculation		182			mg/L	1	7	04/01/14 12:23	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.07	B		mg/L	0.02	0.1	03/27/14 23:38	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:41	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	03/28/14 0:17	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	340			mg/L	10	20	03/21/14 9:35	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:13	dcw
Sulfate	M300.0 - Ion Chromatography	1	47.0			mg/L	0.5	2.5	03/25/14 21:52	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT DUPLICATE

ACZ Sample ID: ***L17275-05***
Date Sampled: *03/16/14 12:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 13:46	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:26	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:22	mpb
Total Hot Plate Digestion	M200.2 ICP								03/25/14 10:20	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:46	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT DUPLICATE

ACZ Sample ID: ***L17275-05***
Date Sampled: *03/16/14 12:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:08	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:34	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 15:46	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:41	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0299			mg/L	0.0002	0.001	03/27/14 15:46	las
Arsenic, total	M200.8 ICP-MS	1	0.0252			mg/L	0.0002	0.001	03/28/14 0:41	pmc
Barium, dissolved	M200.7 ICP	1	0.039			mg/L	0.003	0.02	03/21/14 12:08	aeb
Barium, total	M200.7 ICP	1	0.050			mg/L	0.003	0.02	03/26/14 10:34	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:46	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:41	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:08	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:34	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	03/21/14 12:08	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/26/14 10:34	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:46	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:41	pmc
Calcium, dissolved	M200.7 ICP	1	42.6		*	mg/L	0.1	0.5	03/21/14 12:08	aeb
Calcium, total	M200.7 ICP	1	54.6			mg/L	0.1	0.5	03/26/14 10:34	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 15:46	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 0:41	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	03/27/14 15:46	las
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	03/28/14 0:41	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:46	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:41	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:08	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:34	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:08	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:34	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:46	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:41	pmc
Lithium, dissolved	M200.7 ICP	1	0.032	B		mg/L	0.008	0.04	03/21/14 12:08	aeb
Lithium, total	M200.7 ICP	1	0.044			mg/L	0.008	0.04	03/26/14 10:34	jjc
Magnesium, dissolved	M200.7 ICP	1	9.3			mg/L	0.2	1	03/21/14 12:08	aeb
Magnesium, total	M200.7 ICP	1	11.8			mg/L	0.2	1	03/26/14 10:34	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	03/27/14 15:46	las
Manganese, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	03/28/14 0:41	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	03/27/14 13:10	las
Mercury, total	M1631, Atomic Fluorescence	1	1		*	ng/L	0.2	0.5	03/28/14 16:49	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	03/27/14 15:46	las
Molybdenum, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0005	0.003	03/28/14 0:41	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:46	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:41	pmc
Potassium, dissolved	M200.7 ICP	1	3.5			mg/L	0.2	1	03/21/14 12:08	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT DUPLICATE

ACZ Sample ID: ***L17275-05***
Date Sampled: *03/16/14 12:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.2			mg/L	0.2	1	03/26/14 10:34	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:08	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:34	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0059			mg/L	0.0001	0.0003	03/27/14 15:46	las
Selenium, total	M200.8 ICP-MS	1	0.0050			mg/L	0.0001	0.0003	03/28/14 0:41	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:46	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:41	pmc
Sodium, dissolved	M200.7 ICP	1	28			mg/L	0.2	1	03/21/14 12:08	aeb
Sodium, total	M200.7 ICP	1	36.1			mg/L	0.2	1	03/26/14 10:34	jjc
Strontium, dissolved	M200.7 ICP	1	0.198			mg/L	0.005	0.03	03/21/14 12:08	aeb
Strontium, total	M200.7 ICP	1	0.250			mg/L	0.005	0.03	03/26/14 10:34	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:46	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:41	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 15:46	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:41	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:08	aeb
Titanium, total	M200.7 ICP	1	0.009	B		mg/L	0.005	0.03	03/26/14 10:34	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0047			mg/L	0.0001	0.0005	03/27/14 15:46	las
Uranium, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	03/28/14 0:41	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0328			mg/L	0.0002	0.001	03/27/14 15:46	las
Vanadium, total	M200.8 ICP-MS	1	0.0309			mg/L	0.0002	0.001	03/28/14 0:41	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:08	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	03/26/14 10:34	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT DUPLICATE

ACZ Sample ID: ***L17275-05***
Date Sampled: *03/16/14 12:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	166			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	166			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	16.9			mg/L	0.5	2.5	03/25/14 22:27	tcd
Conductivity @25C	SM2510B	1	513			umhos/cm	1	10	03/24/14 17:42	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:16	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:36	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45	B	*	mg/L	0.1	0.5	03/25/14 22:27	tcd
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	1	7	04/01/14 12:23	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.07	B		mg/L	0.02	0.1	03/27/14 23:40	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:42	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	03/28/14 0:21	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	340			mg/L	10	20	03/21/14 9:37	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:15	dcw
Sulfate	M300.0 - Ion Chromatography	1	47.1			mg/L	0.5	2.5	03/25/14 22:27	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L17275-06***
Date Sampled: *03/16/14 15:25*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 13:56	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:36	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:29	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 9:56	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 10:32	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L17275-06***
Date Sampled: *03/16/14 15:25*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:11	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:37	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	03/27/14 15:56	las
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	03/28/14 0:51	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.1039			mg/L	0.0002	0.001	03/27/14 15:56	las
Arsenic, total	M200.8 ICP-MS	1	0.0867			mg/L	0.0002	0.001	03/28/14 0:51	pmc
Barium, dissolved	M200.7 ICP	1	0.045			mg/L	0.003	0.02	03/21/14 12:11	aeb
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	03/26/14 10:37	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:56	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:51	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:11	aeb
Bismuth, total	M200.7 ICP	1	0.05	B	*	mg/L	0.04	0.2	03/26/14 10:37	jjc
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	03/21/14 12:11	aeb
Boron, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	03/26/14 10:37	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:56	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:51	pmc
Calcium, dissolved	M200.7 ICP	1	34.8		*	mg/L	0.1	0.5	03/21/14 12:11	aeb
Calcium, total	M200.7 ICP	1	35.9			mg/L	0.1	0.5	03/26/14 10:37	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 15:56	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 0:51	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	03/27/14 15:56	las
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	03/28/14 0:51	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:56	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:51	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:11	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:37	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:11	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:37	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:56	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:51	pmc
Lithium, dissolved	M200.7 ICP	1	0.100			mg/L	0.008	0.04	03/21/14 12:11	aeb
Lithium, total	M200.7 ICP	1	0.103			mg/L	0.008	0.04	03/26/14 10:37	jjc
Magnesium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	03/21/14 12:11	aeb
Magnesium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	03/26/14 10:37	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 15:56	las
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:51	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 13:15	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	03/28/14 16:54	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0211			mg/L	0.0005	0.003	03/27/14 15:56	las
Molybdenum, total	M200.8 ICP-MS	1	0.0214			mg/L	0.0005	0.003	03/28/14 0:51	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 15:56	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:51	pmc
Potassium, dissolved	M200.7 ICP	1	5.5			mg/L	0.2	1	03/21/14 12:11	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L17275-06***
Date Sampled: *03/16/14 15:25*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.5			mg/L	0.2	1	03/26/14 10:37	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:11	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:37	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0023			mg/L	0.0001	0.0003	03/27/14 15:56	las
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	03/28/14 0:51	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 15:56	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:51	pmc
Sodium, dissolved	M200.7 ICP	1	67.4			mg/L	0.2	1	03/21/14 12:11	aeb
Sodium, total	M200.7 ICP	1	70			mg/L	0.2	1	03/26/14 10:37	jjc
Strontium, dissolved	M200.7 ICP	1	0.151			mg/L	0.005	0.03	03/21/14 12:11	aeb
Strontium, total	M200.7 ICP	1	0.153			mg/L	0.005	0.03	03/26/14 10:37	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 15:56	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:51	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	03/27/14 15:56	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 0:51	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:11	aeb
Titanium, total	M200.7 ICP	1	0.007	B		mg/L	0.005	0.03	03/26/14 10:37	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0057			mg/L	0.0001	0.0005	03/27/14 15:56	las
Uranium, total	M200.8 ICP-MS	1	0.0059			mg/L	0.0001	0.0005	03/28/14 0:51	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0243			mg/L	0.0002	0.001	03/27/14 15:56	las
Vanadium, total	M200.8 ICP-MS	1	0.0218			mg/L	0.0002	0.001	03/28/14 0:51	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:11	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/26/14 10:37	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L17275-06***
Date Sampled: *03/16/14 15:25*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	114			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	114			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	5	6.53	B	*	mg/L	2.5	12.5	03/25/14 23:39	tcd
Conductivity @25C	SM2510B	1	536			umhos/cm	1	10	03/24/14 17:51	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:16	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:39	mpb
Fluoride	M300.0 - Ion Chromatography	5		U	*	mg/L	0.5	2.5	03/25/14 23:39	tcd
Hardness as CaCO3	SM2340B - Calculation		111			mg/L	1	7	04/01/14 12:23	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.28			mg/L	0.02	0.1	03/27/14 23:42	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:43	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	20			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	03/28/14 0:22	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390			mg/L	10	20	03/21/14 9:39	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:18	dcw
Sulfate	M300.0 - Ion Chromatography	5	119			mg/L	2.5	12.5	03/25/14 23:39	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: MERC TRANSFER/TRIP BLANK

ACZ Sample ID: ***L17275-07***
Date Sampled: *03/16/14 17:25*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 13:40	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/28/14 17:09	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L17275-08***
Date Sampled: *03/16/14 16:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 14:06	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:45	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:37	mpb
Total Hot Plate Digestion	M200.2 ICP								03/25/14 10:44	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 10:06	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L17275-08***
Date Sampled: *03/16/14 16:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:21	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:46	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:06	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 0:55	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0522			mg/L	0.0002	0.001	03/27/14 16:06	las
Arsenic, total	M200.8 ICP-MS	1	0.0444			mg/L	0.0002	0.001	03/28/14 0:55	pmc
Barium, dissolved	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	03/21/14 12:21	aeb
Barium, total	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	03/26/14 10:46	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:06	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:55	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:21	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:46	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	03/21/14 12:21	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	03/26/14 10:46	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:06	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:55	pmc
Calcium, dissolved	M200.7 ICP	1	24.3		*	mg/L	0.1	0.5	03/21/14 12:21	aeb
Calcium, total	M200.7 ICP	1	25			mg/L	0.1	0.5	03/26/14 10:46	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.002	03/27/14 16:06	las
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	03/28/14 0:55	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	03/27/14 16:06	las
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	03/28/14 0:55	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:06	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 0:55	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:21	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:46	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:21	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:46	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:06	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:55	pmc
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	03/21/14 12:21	aeb
Lithium, total	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	03/26/14 10:46	jjc
Magnesium, dissolved	M200.7 ICP	1	14.2			mg/L	0.2	1	03/21/14 12:21	aeb
Magnesium, total	M200.7 ICP	1	14.4			mg/L	0.2	1	03/26/14 10:46	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	03/27/14 16:06	las
Manganese, total	M200.8 ICP-MS	1	0.0200			mg/L	0.0005	0.003	03/28/14 0:55	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	03/27/14 13:46	las
Mercury, total	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	03/28/14 17:14	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0110			mg/L	0.0005	0.003	03/27/14 16:06	las
Molybdenum, total	M200.8 ICP-MS	1	0.0108			mg/L	0.0005	0.003	03/28/14 0:55	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 16:06	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 0:55	pmc
Potassium, dissolved	M200.7 ICP	1	8.5			mg/L	0.2	1	03/21/14 12:21	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L17275-08***
Date Sampled: *03/16/14 16:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.5			mg/L	0.2	1	03/26/14 10:46	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:21	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:46	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	03/27/14 16:06	las
Selenium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	03/28/14 0:55	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:06	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 0:55	pmc
Sodium, dissolved	M200.7 ICP	1	43.9			mg/L	0.2	1	03/21/14 12:21	aeb
Sodium, total	M200.7 ICP	1	45.9			mg/L	0.2	1	03/26/14 10:46	jjc
Strontium, dissolved	M200.7 ICP	1	0.134			mg/L	0.005	0.03	03/21/14 12:21	aeb
Strontium, total	M200.7 ICP	1	0.135			mg/L	0.005	0.03	03/26/14 10:46	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:06	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 0:55	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 16:06	las
Tin, total	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	03/28/14 0:55	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:21	aeb
Titanium, total	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	03/26/14 10:46	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0005	03/27/14 16:06	las
Uranium, total	M200.8 ICP-MS	1	0.0045			mg/L	0.0001	0.0005	03/28/14 0:55	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0443			mg/L	0.0002	0.001	03/27/14 16:06	las
Vanadium, total	M200.8 ICP-MS	1	0.0422			mg/L	0.0002	0.001	03/28/14 0:55	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:21	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/26/14 10:46	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L17275-08***
Date Sampled: *03/16/14 16:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	140			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	140			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	8.82			mg/L	0.5	2.5	03/25/14 23:57	tcd
Conductivity @25C	SM2510B	1	442			umhos/cm	1	10	03/24/14 18:00	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:19	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:40	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.61		*	mg/L	0.1	0.5	03/25/14 23:57	tcd
Hardness as CaCO3	SM2340B - Calculation		119			mg/L	1	7	04/01/14 12:24	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.28			mg/L	0.02	0.1	03/27/14 23:47	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:44	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	20			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	03/28/14 0:23	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	03/21/14 9:40	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:20	dcw
Sulfate	M300.0 - Ion Chromatography	1	44.3			mg/L	0.5	2.5	03/25/14 23:57	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L17275-09***
Date Sampled: *03/16/14 17:05*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 14:15	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 9:55	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:44	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 10:34	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 10:55	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L17275-09***
Date Sampled: *03/16/14 17:05*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:24	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:49	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:10	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:05	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0489			mg/L	0.0002	0.001	03/27/14 16:10	las
Arsenic, total	M200.8 ICP-MS	1	0.0422			mg/L	0.0002	0.001	03/28/14 1:05	pmc
Barium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	03/21/14 12:24	aeb
Barium, total	M200.7 ICP	1	0.006	B		mg/L	0.003	0.02	03/26/14 10:49	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:10	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:05	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:24	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:49	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	03/21/14 12:24	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	03/26/14 10:49	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:10	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:05	pmc
Calcium, dissolved	M200.7 ICP	1	25.3		*	mg/L	0.1	0.5	03/21/14 12:24	aeb
Calcium, total	M200.7 ICP	1	26.4			mg/L	0.1	0.5	03/26/14 10:49	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	03/27/14 16:10	las
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	03/28/14 1:05	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	03/27/14 16:10	las
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	03/28/14 1:05	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:10	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:05	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:24	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:49	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:24	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:49	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:10	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:05	pmc
Lithium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.008	0.04	03/21/14 12:24	aeb
Lithium, total	M200.7 ICP	1	0.016	B		mg/L	0.008	0.04	03/26/14 10:49	jjc
Magnesium, dissolved	M200.7 ICP	1	14.3			mg/L	0.2	1	03/21/14 12:24	aeb
Magnesium, total	M200.7 ICP	1	14.6			mg/L	0.2	1	03/26/14 10:49	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0005	0.003	03/27/14 16:10	las
Manganese, total	M200.8 ICP-MS	1	0.0083			mg/L	0.0005	0.003	03/28/14 1:05	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	03/27/14 13:51	las
Mercury, total	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	03/28/14 17:20	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0098			mg/L	0.0005	0.003	03/27/14 16:10	las
Molybdenum, total	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	03/28/14 1:05	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 16:10	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 1:05	pmc
Potassium, dissolved	M200.7 ICP	1	8.4			mg/L	0.2	1	03/21/14 12:24	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L17275-09***
Date Sampled: *03/16/14 17:05*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.6			mg/L	0.2	1	03/26/14 10:49	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:24	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:49	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0003	03/27/14 16:10	las
Selenium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0003	03/28/14 1:05	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:10	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:05	pmc
Sodium, dissolved	M200.7 ICP	1	41.1			mg/L	0.2	1	03/21/14 12:24	aeb
Sodium, total	M200.7 ICP	1	43.4			mg/L	0.2	1	03/26/14 10:49	jjc
Strontium, dissolved	M200.7 ICP	1	0.145			mg/L	0.005	0.03	03/21/14 12:24	aeb
Strontium, total	M200.7 ICP	1	0.149			mg/L	0.005	0.03	03/26/14 10:49	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:10	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:05	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 16:10	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 1:05	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:24	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/26/14 10:49	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	03/27/14 16:10	las
Uranium, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0005	03/28/14 1:05	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0483			mg/L	0.0002	0.001	03/27/14 16:10	las
Vanadium, total	M200.8 ICP-MS	1	0.0452			mg/L	0.0002	0.001	03/28/14 1:05	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:24	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 10:49	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L17275-09***
Date Sampled: *03/16/14 17:05*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	136			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	136			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	10.6			mg/L	0.5	2.5	03/26/14 0:15	tcd
Conductivity @25C	SM2510B	1	445			umhos/cm	1	10	03/24/14 18:09	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:20	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:41	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.62		*	mg/L	0.1	0.5	03/26/14 0:15	tcd
Hardness as CaCO3	SM2340B - Calculation		122			mg/L	1	7	04/01/14 12:24	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.32			mg/L	0.02	0.1	03/27/14 23:48	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 12:45	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	19			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	03/28/14 0:24	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	340			mg/L	10	20	03/21/14 16:14	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:23	dcw
Sulfate	M300.0 - Ion Chromatography	1	43.7			mg/L	0.5	2.5	03/26/14 0:15	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L17275-10***
Date Sampled: *03/17/14 11:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 14:25	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 10:04	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 15:52	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 10:44	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 11:07	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L17275-10***
Date Sampled: *03/17/14 11:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:27	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:53	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:13	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:08	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0319			mg/L	0.0002	0.001	03/27/14 16:13	las
Arsenic, total	M200.8 ICP-MS	1	0.0278			mg/L	0.0002	0.001	03/28/14 1:08	pmc
Barium, dissolved	M200.7 ICP	1	0.064			mg/L	0.003	0.02	03/21/14 12:27	aeb
Barium, total	M200.7 ICP	1	0.067			mg/L	0.003	0.02	03/26/14 10:53	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:13	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:08	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:27	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:53	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	03/21/14 12:27	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	03/26/14 10:53	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:13	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:08	pmc
Calcium, dissolved	M200.7 ICP	1	34.6		*	mg/L	0.1	0.5	03/21/14 12:27	aeb
Calcium, total	M200.7 ICP	1	35.2			mg/L	0.1	0.5	03/26/14 10:53	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 16:13	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 1:08	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	03/27/14 16:13	las
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	03/28/14 1:08	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.003	03/27/14 16:13	las
Copper, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	03/28/14 1:08	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:27	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:53	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:27	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:53	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:13	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:08	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	03/21/14 12:27	aeb
Lithium, total	M200.7 ICP	1	0.020	B		mg/L	0.008	0.04	03/26/14 10:53	jjc
Magnesium, dissolved	M200.7 ICP	1	9			mg/L	0.2	1	03/21/14 12:27	aeb
Magnesium, total	M200.7 ICP	1	9			mg/L	0.2	1	03/26/14 10:53	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:13	las
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	03/28/14 1:08	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	03/27/14 13:56	las
Mercury, total	M1631, Atomic Fluorescence	1	1.4			ng/L	0.2	0.5	03/28/14 17:25	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	03/27/14 16:13	las
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	03/28/14 1:08	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	03/27/14 16:13	las
Nickel, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	03/28/14 1:08	pmc
Potassium, dissolved	M200.7 ICP	1	3.8			mg/L	0.2	1	03/21/14 12:27	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L17275-10***
Date Sampled: *03/17/14 11:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	3.7			mg/L	0.2	1	03/26/14 10:53	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:27	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:53	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	03/27/14 16:13	las
Selenium, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	03/28/14 1:08	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:13	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:08	pmc
Sodium, dissolved	M200.7 ICP	1	40.9			mg/L	0.2	1	03/21/14 12:27	aeb
Sodium, total	M200.7 ICP	1	42			mg/L	0.2	1	03/26/14 10:53	jjc
Strontium, dissolved	M200.7 ICP	1	0.239			mg/L	0.005	0.03	03/21/14 12:27	aeb
Strontium, total	M200.7 ICP	1	0.237			mg/L	0.005	0.03	03/26/14 10:53	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:13	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:08	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 16:13	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 1:08	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:27	aeb
Titanium, total	M200.7 ICP	1	0.007	B		mg/L	0.005	0.03	03/26/14 10:53	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	03/27/14 16:13	las
Uranium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	03/28/14 1:08	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0337			mg/L	0.0002	0.001	03/27/14 16:13	las
Vanadium, total	M200.8 ICP-MS	1	0.0315			mg/L	0.0002	0.001	03/28/14 1:08	pmc
Zinc, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	03/21/14 12:27	aeb
Zinc, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	03/26/14 10:53	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L17275-10***
Date Sampled: *03/17/14 11:10*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	131			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	131			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	14.4			mg/L	0.5	2.5	03/26/14 0:33	tcd
Conductivity @25C	SM2510B	1	427			umhos/cm	1	10	03/24/14 18:18	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:21	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:41	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45	B	*	mg/L	0.1	0.5	03/26/14 0:33	tcd
Hardness as CaCO3	SM2340B - Calculation		123			mg/L	1	7	04/01/14 12:24	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.05	B		mg/L	0.02	0.1	03/27/14 23:50	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 13:11	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	19			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	03/28/14 0:25	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	310			mg/L	10	20	03/21/14 16:17	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:26	dcw
Sulfate	M300.0 - Ion Chromatography	1	42.0			mg/L	0.5	2.5	03/26/14 0:33	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH LOWER

ACZ Sample ID: ***L17275-11***
Date Sampled: *03/17/14 12:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 14:34	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 10:14	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/27/14 16:00	mpb
Total Hot Plate Digestion	M200.2 ICP								03/25/14 11:18	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 10:54	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH LOWER

ACZ Sample ID: ***L17275-11***
Date Sampled: *03/17/14 12:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:30	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:56	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:17	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:12	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0264			mg/L	0.0002	0.001	03/27/14 16:17	las
Arsenic, total	M200.8 ICP-MS	1	0.0229			mg/L	0.0002	0.001	03/28/14 1:12	pmc
Barium, dissolved	M200.7 ICP	1	0.088			mg/L	0.003	0.02	03/21/14 12:30	aeb
Barium, total	M200.7 ICP	1	0.092			mg/L	0.003	0.02	03/26/14 10:56	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:17	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:12	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:30	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:56	jjc
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	03/21/14 12:30	aeb
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	03/26/14 10:56	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:17	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:12	pmc
Calcium, dissolved	M200.7 ICP	1	25.4			mg/L	0.1	0.5	03/21/14 12:30	aeb
Calcium, total	M200.7 ICP	1	26.4			mg/L	0.1	0.5	03/26/14 10:56	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 16:17	las
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	03/28/14 1:12	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	03/27/14 16:17	las
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	03/28/14 1:12	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:17	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:12	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:30	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:56	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:30	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:56	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:17	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:12	pmc
Lithium, dissolved	M200.7 ICP	1	0.014	B		mg/L	0.008	0.04	03/21/14 12:30	aeb
Lithium, total	M200.7 ICP	1	0.019	B		mg/L	0.008	0.04	03/26/14 10:56	jjc
Magnesium, dissolved	M200.7 ICP	1	5.7			mg/L	0.2	1	03/21/14 12:30	aeb
Magnesium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	03/26/14 10:56	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	03/27/14 16:17	las
Manganese, total	M200.8 ICP-MS	1	0.0038		*	mg/L	0.0005	0.003	03/28/14 1:12	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	03/27/14 14:01	las
Mercury, total	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	03/28/14 17:30	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	03/27/14 16:17	las
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	03/28/14 1:12	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 16:17	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 1:12	pmc
Potassium, dissolved	M200.7 ICP	1	2.7			mg/L	0.2	1	03/21/14 12:30	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH LOWER

ACZ Sample ID: ***L17275-11***
Date Sampled: *03/17/14 12:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	2.6			mg/L	0.2	1	03/26/14 10:56	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:30	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:56	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0023			mg/L	0.0001	0.0003	03/27/14 16:17	las
Selenium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	03/28/14 1:12	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:17	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:12	pmc
Sodium, dissolved	M200.7 ICP	1	39.8			mg/L	0.2	1	03/21/14 12:30	aeb
Sodium, total	M200.7 ICP	1	41.5			mg/L	0.2	1	03/26/14 10:56	jjc
Strontium, dissolved	M200.7 ICP	1	0.195			mg/L	0.005	0.03	03/21/14 12:30	aeb
Strontium, total	M200.7 ICP	1	0.197			mg/L	0.005	0.03	03/26/14 10:56	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:17	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:12	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 16:17	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 1:12	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:30	aeb
Titanium, total	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	03/26/14 10:56	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0069			mg/L	0.0001	0.0005	03/27/14 16:17	las
Uranium, total	M200.8 ICP-MS	1	0.0069			mg/L	0.0001	0.0005	03/28/14 1:12	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0186			mg/L	0.0002	0.001	03/27/14 16:17	las
Vanadium, total	M200.8 ICP-MS	1	0.0169			mg/L	0.0002	0.001	03/28/14 1:12	pmc
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/21/14 12:30	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	03/26/14 10:56	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: SOURDOUGH LOWER

ACZ Sample ID: ***L17275-11***
Date Sampled: *03/17/14 12:30*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	112			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	112			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	9.21			mg/L	0.5	2.5	03/26/14 0:51	tcd
Conductivity @25C	SM2510B	1	352			umhos/cm	1	10	03/24/14 18:27	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:22	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:42	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.33	B	*	mg/L	0.1	0.5	03/26/14 0:51	tcd
Hardness as CaCO3	SM2340B - Calculation		87			mg/L	1	7	04/01/14 12:25	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.76			mg/L	0.02	0.1	03/27/14 23:51	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 13:13	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	20			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	03/28/14 0:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260			mg/L	10	20	03/21/14 16:19	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:28	dcw
Sulfate	M300.0 - Ion Chromatography	1	30.7			mg/L	0.5	2.5	03/26/14 0:51	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L17275-12***
Date Sampled: *03/17/14 13:00*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 14:44	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 10:33	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/28/14 12:50	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 11:03	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 11:30	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L17275-12***
Date Sampled: *03/17/14 13:00*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:33	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 10:59	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:20	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:15	pmc
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/27/14 16:20	las
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/28/14 1:15	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	03/21/14 12:33	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	03/26/14 10:59	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:20	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:15	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:33	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 10:59	jjc
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:33	aeb
Boron, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/26/14 10:59	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:20	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:15	pmc
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.1	0.5	03/21/14 12:33	aeb
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	03/26/14 10:59	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 16:20	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 1:15	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:20	las
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:15	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:20	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:15	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:33	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 10:59	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/21/14 12:33	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 10:59	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:20	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:15	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	03/21/14 12:33	aeb
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	03/26/14 10:59	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	03/21/14 12:33	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 10:59	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:20	las
Manganese, total	M200.8 ICP-MS	1	0.0008	B	*	mg/L	0.0005	0.003	03/28/14 1:15	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 14:06	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/28/14 17:35	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:20	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:15	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 16:20	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 1:15	pmc
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	03/21/14 12:33	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L17275-12***
Date Sampled: *03/17/14 13:00*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	U		mg/L	0.2	1	03/26/14 10:59	jjc
Scandium, dissolved	M200.7 ICP	1	U	*	mg/L	0.1	0.5	03/21/14 12:33	aeb
Scandium, total	M200.7 ICP	1	U	*	mg/L	0.1	0.5	03/26/14 10:59	jjc
Selenium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0003	03/27/14 16:20	las
Selenium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0003	03/28/14 1:15	pmc
Silver, dissolved	M200.8 ICP-MS	1	U		mg/L	0.00005	0.0003	03/27/14 16:20	las
Silver, total	M200.8 ICP-MS	1	U		mg/L	0.00005	0.0003	03/28/14 1:15	pmc
Sodium, dissolved	M200.7 ICP	1	U		mg/L	0.2	1	03/21/14 12:33	aeb
Sodium, total	M200.7 ICP	1	U		mg/L	0.2	1	03/26/14 10:59	jjc
Strontium, dissolved	M200.7 ICP	1	U		mg/L	0.005	0.03	03/21/14 12:33	aeb
Strontium, total	M200.7 ICP	1	U		mg/L	0.005	0.03	03/26/14 10:59	jjc
Thallium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	03/27/14 16:20	las
Thallium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	03/28/14 1:15	pmc
Tin, dissolved	M200.8 ICP-MS	1	U	*	mg/L	0.0001	0.0005	03/27/14 16:20	las
Tin, total	M200.8 ICP-MS	1	U	*	mg/L	0.0001	0.0005	03/28/14 1:15	pmc
Titanium, dissolved	M200.7 ICP	1	U		mg/L	0.005	0.03	03/21/14 12:33	aeb
Titanium, total	M200.7 ICP	1	U		mg/L	0.005	0.03	03/26/14 10:59	jjc
Uranium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	03/27/14 16:20	las
Uranium, total	M200.8 ICP-MS	1	U		mg/L	0.0001	0.0005	03/28/14 1:15	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	U		mg/L	0.0002	0.001	03/27/14 16:20	las
Vanadium, total	M200.8 ICP-MS	1	U		mg/L	0.0002	0.001	03/28/14 1:15	pmc
Zinc, dissolved	M200.7 ICP	1	U		mg/L	0.01	0.05	03/21/14 12:33	aeb
Zinc, total	M200.7 ICP	1	U		mg/L	0.01	0.05	03/26/14 10:59	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L17275-12***
Date Sampled: *03/17/14 13:00*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1		U		mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	03/26/14 1:09	tcd
Conductivity @25C	SM2510B	1	1	B		umhos/cm	1	10	03/24/14 18:44	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:22	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:44	mpb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	03/26/14 1:09	tcd
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	1	7	04/01/14 12:25	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/27/14 23:52	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 13:15	tcd
pH (lab)	SM4500H+ B									
pH		1	6.1	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	03/28/14 22:00	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		U		mg/L	10	20	03/21/14 16:21	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:34	dcw
Sulfate	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	03/26/14 1:09	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L17275-13***
Date Sampled: *03/17/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 15:03	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 10:52	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/28/14 13:10	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 11:13	las
Total Hot Plate Digestion	M200.2 ICP								03/25/14 11:42	jjc

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 11:02	jjc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:19	pmc
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/28/14 1:19	pmc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	03/26/14 11:02	jjc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:19	pmc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 11:02	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 11:02	jjc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:19	pmc
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	03/26/14 11:02	jjc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 1:19	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:19	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:19	pmc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 11:02	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	03/26/14 11:02	jjc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:19	pmc
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	03/26/14 11:02	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 11:02	jjc
Manganese, total	M200.8 ICP-MS	1	0.0006	B	*	mg/L	0.0005	0.003	03/28/14 1:19	pmc
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/28/14 17:40	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:19	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 1:19	pmc
Potassium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 11:02	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 11:02	jjc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	03/28/14 1:19	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:19	pmc
Sodium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 11:02	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/26/14 11:02	jjc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:19	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 1:19	pmc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/26/14 11:02	jjc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:19	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/28/14 1:19	pmc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/26/14 11:02	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L17275-13***
Date Sampled: *03/17/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1		U		mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	03/26/14 1:27	tcd
Conductivity @25C	SM2510B	1		U		umhos/cm	1	10	03/24/14 18:51	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:24	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:46	mpb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.1	0.5	03/26/14 1:27	tcd
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/27/14 23:53	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 13:16	tcd
pH (lab)	SM4500H+ B									
pH		1	5.9	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	03/28/14 22:02	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		U		mg/L	10	20	03/21/14 16:23	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:36	dcw
Sulfate	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	03/26/14 1:27	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L17275-14***
Date Sampled: *03/16/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/24/14 15:22	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/26/14 11:02	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								03/28/14 13:31	bsu
Total Hot Plate Digestion	M200.2 ICP								03/25/14 11:53	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/26/14 11:22	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L17275-14***
Date Sampled: *03/16/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/21/14 12:36	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	03/26/14 11:05	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/27/14 16:24	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	03/28/14 1:22	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0710			mg/L	0.0002	0.001	03/27/14 16:24	las
Arsenic, total	M200.8 ICP-MS	1	0.0589			mg/L	0.0002	0.001	03/28/14 1:22	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	03/21/14 12:36	aeb
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	03/26/14 11:05	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:24	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:22	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/21/14 12:36	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/26/14 11:05	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	03/21/14 12:36	aeb
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	03/26/14 11:05	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:24	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:22	pmc
Calcium, dissolved	M200.7 ICP	1	11.4			mg/L	0.1	0.5	03/21/14 12:36	aeb
Calcium, total	M200.7 ICP	1	11.7			mg/L	0.1	0.5	03/26/14 11:05	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/27/14 16:24	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	03/28/14 1:22	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	03/27/14 16:24	las
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:22	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/27/14 16:24	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	03/28/14 1:22	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:36	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 11:05	jjc
Iron, dissolved	M200.7 ICP	1	0.06			mg/L	0.02	0.05	03/21/14 12:36	aeb
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	03/26/14 11:05	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:24	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:22	pmc
Lithium, dissolved	M200.7 ICP	1	0.154			mg/L	0.008	0.04	03/21/14 12:36	aeb
Lithium, total	M200.7 ICP	1	0.156			mg/L	0.008	0.04	03/26/14 11:05	jjc
Magnesium, dissolved	M200.7 ICP	1	0.2	B		mg/L	0.2	1	03/21/14 12:36	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/26/14 11:05	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0513			mg/L	0.0005	0.003	03/27/14 16:24	las
Manganese, total	M200.8 ICP-MS	1	0.0471		*	mg/L	0.0005	0.003	03/28/14 1:22	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	03/27/14 14:11	las
Mercury, total	M1631, Atomic Fluorescence	1	1.2			ng/L	0.2	0.5	03/28/14 17:45	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0077			mg/L	0.0005	0.003	03/27/14 16:24	las
Molybdenum, total	M200.8 ICP-MS	1	0.0073			mg/L	0.0005	0.003	03/28/14 1:22	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/27/14 16:24	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	03/28/14 1:22	pmc
Potassium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.2	1	03/21/14 12:36	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L17275-14***
Date Sampled: *03/16/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.4	B		mg/L	0.2	1	03/26/14 11:05	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/21/14 12:36	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/26/14 11:05	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	03/27/14 16:24	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	03/28/14 1:22	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/27/14 16:24	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	03/28/14 1:22	pmc
Sodium, dissolved	M200.7 ICP	1	129			mg/L	0.2	1	03/21/14 12:36	aeb
Sodium, total	M200.7 ICP	1	134			mg/L	0.2	1	03/26/14 11:05	jjc
Strontium, dissolved	M200.7 ICP	1	0.038			mg/L	0.005	0.03	03/21/14 12:36	aeb
Strontium, total	M200.7 ICP	1	0.039			mg/L	0.005	0.03	03/26/14 11:05	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:24	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:22	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/27/14 16:24	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	03/28/14 1:22	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/21/14 12:36	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/26/14 11:05	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/27/14 16:24	las
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	03/28/14 1:22	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/27/14 16:24	las
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	03/28/14 1:22	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/21/14 12:36	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/26/14 11:05	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L17275-14***
Date Sampled: *03/16/14 13:20*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	162			mg/L	2	20	03/24/14 0:00	abd
Carbonate as CaCO3		1	6	B		mg/L	2	20	03/24/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	03/24/14 0:00	abd
Total Alkalinity		1	168			mg/L	2	20	03/24/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	22.2			mg/L	0.5	2.5	03/26/14 1:45	tcd
Conductivity @25C	SM2510B	1	625			umhos/cm	1	10	03/24/14 19:01	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/24/14 18:26	bsu
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 13:47	mpb
Fluoride	M300.0 - Ion Chromatography	1	1.07		*	mg/L	0.1	0.5	03/26/14 1:45	tcd
Hardness as CaCO3	SM2340B - Calculation		29			mg/L	1	7	04/01/14 12:26	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/27/14 23:54	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.06	B	*	mg/L	0.05	0.5	03/27/14 13:18	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	03/24/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	03/24/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	03/28/14 22:05	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	380			mg/L	10	20	03/21/14 16:25	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/22/14 11:39	dcw
Sulfate	M300.0 - Ion Chromatography	1	80.6			mg/L	0.5	2.5	03/26/14 1:45	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: MERC. TRANSFER/TRIP BLANK

ACZ Sample ID: ***L17275-15***
Date Sampled: *03/17/14 12:45*
Date Received: *03/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/27/14 14:16	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	03/28/14 17:50	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L17275***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361080													
WG361080PBW1	PBW	03/24/14 13:06				5.8	mg/L		-20	20			
WG361080LCSW3	LCSW	03/24/14 13:25	WC140313-	820.0001		805.1	mg/L	98.2	90	110			
WG361080LCSW6	LCSW	03/24/14 16:46	WC140313-	820.0001		831.4	mg/L	101.4	90	110			
WG361080PBW2	PBW	03/24/14 16:55				2.6	mg/L		-20	20			
L17275-11DUP	DUP	03/24/14 18:37			112	123.6	mg/L				9.8	20	
L17282-01DUP	DUP	03/24/14 20:12			207	205.7	mg/L				0.6	20	
WG361080LCSW9	LCSW	03/24/14 20:32	WC140313-	820.0001		838.2	mg/L	102.2	90	110			
WG361080PBW3	PBW	03/24/14 20:41				2.8	mg/L		-20	20			
WG361080LCSW12	LCSW	03/25/14 0:28	WC140313-	820.0001		844.6	mg/L	103	90	110			
WG361080PBW4	PBW	03/25/14 0:38				2.5	mg/L		-20	20			
WG361080LCSW15	LCSW	03/25/14 3:51	WC140313-	820.0001		850.4	mg/L	103.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.941	mg/L	97.1	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.09	0.09			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1.0011		1.022	mg/L	102.1	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2.0022	U	2.122	mg/L	106	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2.0022	U	2.156	mg/L	107.7	85	115	1.59	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1.0011	U	1.015	mg/L	101.4	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1.0011	U	1.063	mg/L	106.2	85	115	4.62	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.896	mg/L	94.8	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.09	0.09			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.066	0.066			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1.0011		.99	mg/L	98.9	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1.0011	U	1.008	mg/L	100.7	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1.0011	U	1.003	mg/L	100.2	70	130	0.5	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1.0011	U	.974	mg/L	97.3	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1.0011	U	.988	mg/L	98.7	70	130	1.43	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.02004		.02134	mg/L	106.5	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0012	0.0012			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.01		.00996	mg/L	99.6	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.01	U	.01099	mg/L	109.9	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.01	U	.01078	mg/L	107.8	70	130	1.93	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.01	U	.01019	mg/L	101.9	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.01	U	.01039	mg/L	103.9	70	130	1.94	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.02004		.02049	mg/L	102.2	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0012	0.0012			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00088	0.00088			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.01		.01085	mg/L	108.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.01	U	.01041	mg/L	104.1	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.01	U	.01029	mg/L	102.9	70	130	1.16	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.01	U	.01095	mg/L	109.5	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.01	U	.01075	mg/L	107.5	70	130	1.84	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05254	mg/L	105.1	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0006	0.0006			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.0501		.04934	mg/L	98.5	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.0501	.0299	.09414	mg/L	128.2	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.0501	.0299	.09433	mg/L	128.6	70	130	0.2	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.0501	.0003	.06141	mg/L	122	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.0501	.0003	.06132	mg/L	121.8	70	130	0.15	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.05142	mg/L	102.8	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0006	0.0006			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00044	0.00044			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.0501		.05622	mg/L	112.2	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.0501	.0444	.0954	mg/L	101.8	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.0501	.0444	.09711	mg/L	105.2	70	130	1.78	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.0501	.0011	.0574	mg/L	112.4	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.0501	.0011	.05866	mg/L	114.9	70	130	2.17	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.9458	mg/L	97.3	95	105			
WG360973ICB	ICB	03/21/14 11:30				.0031	mg/L		-0.009	0.009			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	.5		.4869	mg/L	97.4	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	1	.014	.9942	mg/L	98	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	1	.014	.9968	mg/L	98.3	85	115	0.26	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	.5	.023	.5073	mg/L	96.9	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	.5	.023	.5193	mg/L	99.3	85	115	2.34	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.9302	mg/L	96.5	95	105			
WG361188ICB	ICB	03/26/14 9:56				.0031	mg/L		-0.009	0.009			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.0066	0.0066			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	.5		.4971	mg/L	99.4	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	.5	.004	.5014	mg/L	99.5	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	.5	.004	.5004	mg/L	99.3	70	130	0.2	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	.5	.118	.6093	mg/L	98.3	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	.5	.118	.6186	mg/L	100.1	70	130	1.51	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04848	mg/L	97	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.00015	0.00015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04726	mg/L	94.4	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	U	.0548	mg/L	109.5	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	U	.05317	mg/L	106.2	70	130	3.02	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	U	.05598	mg/L	111.8	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	U	.05353	mg/L	107	70	130	4.47	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04771	mg/L	95.4	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.00015	0.00015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00011	0.00011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.05211	mg/L	104.1	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	U	.05159	mg/L	103.1	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	U	.05132	mg/L	102.5	70	130	0.52	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	.0057	.05386	mg/L	96.2	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	.0057	.05316	mg/L	94.8	70	130	1.31	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.957	mg/L	97.9	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.12	0.12			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	.999		.995	mg/L	99.6	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	1.998	U	2.044	mg/L	102.3	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	1.998	U	2.072	mg/L	103.7	85	115	1.36	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	.999	U	.987	mg/L	98.8	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	.999	U	1.049	mg/L	105	85	115	6.09	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.934	mg/L	96.7	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.12	0.12			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.088	0.088			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	.999		1.075	mg/L	107.6	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	.999	U	1.04	mg/L	104.1	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	.999	U	1.02	mg/L	102.1	70	130	1.94	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	.999	.05	1.07	mg/L	102.1	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	.999	.05	1.077	mg/L	102.8	70	130	0.65	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.941	mg/L	97.1	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.03	0.03			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	.5005		.5	mg/L	99.9	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	1.001	.11	1.108	mg/L	99.7	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	1.001	.11	1.115	mg/L	100.4	85	115	0.63	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	.5005	.11	.596	mg/L	97.1	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	.5005	.11	.617	mg/L	101.3	85	115	3.46	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.914	mg/L	95.7	95	105			
WG361188ICB	ICB	03/26/14 9:56				.013	mg/L		-0.03	0.03			
WG361129LRB	LRB	03/26/14 10:09				.012	mg/L		-0.022	0.022			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	.5005		.488	mg/L	97.5	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	.5005	.06	.537	mg/L	95.3	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	.5005	.06	.542	mg/L	96.3	70	130	0.93	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	.5005	.01	.471	mg/L	92.1	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	.5005	.01	.479	mg/L	93.7	70	130	1.68	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04814	mg/L	96.3	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.0501		.04708	mg/L	94	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.0501	U	.05202	mg/L	103.8	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.0501	U	.05138	mg/L	102.6	70	130	1.24	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.0501	U	.05063	mg/L	101.1	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.0501	U	.05079	mg/L	101.4	70	130	0.32	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04885	mg/L	97.7	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.0501		.05237	mg/L	104.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.0501	U	.04944	mg/L	98.7	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.0501	U	.04914	mg/L	98.1	70	130	0.61	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.0501	.0022	.05158	mg/L	98.6	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.0501	.0022	.05176	mg/L	98.9	70	130	0.35	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	100		97.43	mg/L	97.4	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.3	0.3			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	67.98099		69.16	mg/L	101.7	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	135.96198	959	1054	mg/L	69.9	85	115			M3
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	135.96198	959	1070.2	mg/L	81.8	85	115	1.53	20	M3
L17332-01AS	AS	03/21/14 13:01	II140317-2	67.98099	182	243.1	mg/L	89.9	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	67.98099	182	251.1	mg/L	101.6	85	115	3.24	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	100		98.32	mg/L	98.3	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.3	0.3			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.22	0.22			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	67.98099		70.5	mg/L	103.7	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	67.98099	46	116.5	mg/L	103.7	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	67.98099	46	116.4	mg/L	103.6	70	130	0.09	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	67.98099	29.6	99.02	mg/L	102.1	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	67.98099	29.6	100.9	mg/L	104.9	70	130	1.88	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361148													
WG361148LFB1	LFB	03/25/14 12:54	WI140306-2	30		30.4	mg/L	101.3	90	110			
L17232-03DUP	DUP	03/25/14 17:41			1.7	1.72	mg/L				1.2	20	RA
L17232-04AS	AS	03/25/14 18:17	WI140306-2	30	1.48	31.9	mg/L	101.4	90	110			
WG361148LFB2	LFB	03/25/14 21:34	WI140306-2	30		30.5	mg/L	101.7	90	110			
L17275-04DUP	DUP	03/25/14 22:10			16.9	16.9	mg/L				0	20	
L17275-05AS	AS	03/25/14 23:21	WI140306-2	30	16.9	46.9	mg/L	100	90	110			

SPF Water Engineering

ACZ Project ID: ***L17275***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04923	mg/L	98.5	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0015	0.0015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04848	mg/L	96.9	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	U	.05412	mg/L	108.1	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	U	.05429	mg/L	108.5	70	130	0.31	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	U	.05297	mg/L	105.8	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	U	.05281	mg/L	105.5	70	130	0.3	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04952	mg/L	99	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0015	0.0015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.0011	0.0011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.04979	mg/L	99.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	.0007	.04808	mg/L	94.7	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	.0007	.04891	mg/L	96.3	70	130	1.71	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	.009	.0489	mg/L	79.7	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	.009	.0501	mg/L	82.1	70	130	2.42	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04904	mg/L	98.1	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.00015	0.00015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04906	mg/L	98	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	.00016	.05662	mg/L	112.8	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	.00016	.05515	mg/L	109.9	70	130	2.63	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	.00055	.05785	mg/L	114.5	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	.00055	.05653	mg/L	111.8	70	130	2.31	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04833	mg/L	96.7	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.00015	0.00015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00011	0.00011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.05028	mg/L	100.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	.0001	.05043	mg/L	100.6	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	.0001	.05001	mg/L	99.7	70	130	0.84	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	.306	.3554	mg/L	98.7	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	.306	.354	mg/L	95.9	70	130	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361080													
WG361080LCSW2	LCSW	03/24/14 13:11	PCN43577	1408.8		1439.5	umhos/cm	102.2	90	110			
WG361080LCSW5	LCSW	03/24/14 16:31	PCN43577	1408.8		1424.2	umhos/cm	101.1	90	110			
L17275-11DUP	DUP	03/24/14 18:37			352	352	umhos/cm				0	20	
L17282-01DUP	DUP	03/24/14 20:12			583	585	umhos/cm				0.3	20	
WG361080LCSW8	LCSW	03/24/14 20:17	PCN43577	1408.8		1415	umhos/cm	100.4	90	110			
WG361080LCSW11	LCSW	03/25/14 0:13	PCN43577	1408.8		1402.8	umhos/cm	99.6	90	110			
WG361080LCSW14	LCSW	03/25/14 3:36	PCN43577	1408.8		1394.7	umhos/cm	99	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04939	mg/L	98.8	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0015	0.0015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04843	mg/L	96.8	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	U	.05268	mg/L	105.3	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	U	.05215	mg/L	104.2	70	130	1.01	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	.0008	.05052	mg/L	99.3	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	.0008	.05035	mg/L	99	70	130	0.34	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04876	mg/L	97.5	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0015	0.0015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.0011	0.0011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.04928	mg/L	98.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	U	.04568	mg/L	91.3	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	U	.0458	mg/L	91.5	70	130	0.26	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	.003	.0493	mg/L	92.5	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	.003	.0503	mg/L	94.5	70	130	2.01	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361114													
WG361114ICV	ICV	03/24/14 18:07	WI140322-7	.3		.2934	mg/L	97.8	90	110			
WG361114ICB	ICB	03/24/14 18:08				U	mg/L		-0.003	0.003			
WG361087LRB	LRB	03/24/14 18:09				U	mg/L		-0.003	0.003			
WG361087LFB	LFB	03/24/14 18:09	WI140322-4	.2		.2015	mg/L	100.8	90	110			
L17275-01DUP	DUP	03/24/14 18:11			U	U	mg/L				0	20	RA
L17275-02LFM	LFM	03/24/14 18:13	WI140322-4	.2	U	.2033	mg/L	101.7	90	110			
L17275-12DUP	DUP	03/24/14 18:23			U	U	mg/L				0	20	RA
L17275-13LFM	LFM	03/24/14 18:25	WI140322-4	.2	U	.2102	mg/L	105.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L17275***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361346													
WG361346ICV	ICV	03/27/14 11:49	WI140322-7	.3		.2942	mg/L	98.1	90	110			
WG361346ICB	ICB	03/27/14 11:50				U	mg/L		-0.003	0.003			
WG361357													
WG361218LRB	LRB	03/27/14 13:28				U	mg/L		-0.003	0.003			
WG361218LFB	LFB	03/27/14 13:29	WI140322-6	.2		.1902	mg/L	95.1	90	110			
L17264-03LFM	LFM	03/27/14 13:31	WI140322-6	.2	U	.1901	mg/L	95.1	90	110			
L17275-01DUP	DUP	03/27/14 13:33			U	U	mg/L				0	20	RA
L17275-11LFM	LFM	03/27/14 13:43	WI140322-6	.2	U	.1903	mg/L	95.2	90	110			
L17275-12DUP	DUP	03/27/14 13:45			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG361148													
WG361148LFB1	LFB	03/25/14 12:54	WI140306-2	1.5		1.53	mg/L	102	90	110			
L17232-03DUP	DUP	03/25/14 17:41			U	U	mg/L				0	20	RA
L17232-04AS	AS	03/25/14 18:17	WI140306-2	1.5	U	1.59	mg/L	106	90	110			
WG361148LFB2	LFB	03/25/14 21:34	WI140306-2	1.5		1.54	mg/L	102.7	90	110			
L17275-04DUP	DUP	03/25/14 22:10			.44	.45	mg/L				2.2	20	RA
L17275-05AS	AS	03/25/14 23:21	WI140306-2	1.5	.45	2	mg/L	103.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.96	mg/L	98	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.3	0.3			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1.001		.98	mg/L	97.9	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2.002	U	2.01	mg/L	100.4	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2.002	U	2.07	mg/L	103.4	85	115	2.94	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1.001	U	.99	mg/L	98.9	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1.001	U	1.05	mg/L	104.9	85	115	5.88	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.92	mg/L	96	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.3	0.3			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.22	0.22			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1.001		1.01	mg/L	100.9	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1.001	U	.99	mg/L	98.9	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1.001	U	1.02	mg/L	101.9	70	130	2.99	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1.001	U	1	mg/L	99.9	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1.001	U	1.02	mg/L	101.9	70	130	1.98	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.955	mg/L	97.8	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.06	0.06			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1.0014		1.01	mg/L	100.9	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2.0028	U	1.969	mg/L	98.3	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2.0028	U	1.985	mg/L	99.1	85	115	0.81	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1.0014	2.03	2.931	mg/L	91	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1.0014	2.03	3.014	mg/L	99.3	85	115	2.79	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.953	mg/L	97.7	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.06	0.06			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.044	0.044			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1.0014		1.028	mg/L	102.7	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1.0014	U	1.028	mg/L	102.7	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1.0014	U	1.023	mg/L	102.2	70	130	0.49	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1.0014	U	1.009	mg/L	100.8	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1.0014	U	1.027	mg/L	102.6	70	130	1.77	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05084	mg/L	101.7	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04833	mg/L	96.6	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	U	.05292	mg/L	105.7	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	U	.0519	mg/L	103.7	70	130	1.95	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	U	.05271	mg/L	105.3	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	U	.05303	mg/L	106	70	130	0.61	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.05053	mg/L	101.1	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.04937	mg/L	98.6	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	U	.05063	mg/L	101.2	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	U	.04976	mg/L	99.4	70	130	1.73	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	U	.04968	mg/L	99.3	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	U	.04986	mg/L	99.6	70	130	0.36	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.9495	mg/L	97.5	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.024	0.024			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1		.9651	mg/L	96.5	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2	.52	2.472	mg/L	97.6	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2	.52	2.478	mg/L	97.9	85	115	0.24	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1	.088	1.052	mg/L	96.4	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1	.088	1.088	mg/L	100	85	115	3.36	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.9192	mg/L	96	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.024	0.024			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.0176	0.0176			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1		.9627	mg/L	96.3	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1	.021	.989	mg/L	96.8	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1	.021	.9816	mg/L	96.1	70	130	0.75	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1	.011	.9477	mg/L	93.7	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1	.011	.9631	mg/L	95.2	70	130	1.61	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	100		95.96	mg/L	96	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.6	0.6			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	50.00131		48.86	mg/L	97.7	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	100.00262	162	254.6	mg/L	92.6	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	100.00262	162	258.8	mg/L	96.8	85	115	1.64	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	50.00131	33.2	79.77	mg/L	93.1	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	50.00131	33.2	82.97	mg/L	99.5	85	115	3.93	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	100		96.26	mg/L	96.3	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.6	0.6			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.44	0.44			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	50.00131		49.46	mg/L	98.9	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	50.00131	9.8	59.37	mg/L	99.1	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	50.00131	9.8	59.01	mg/L	98.4	70	130	0.61	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	50.00131	15.6	64.1	mg/L	97	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	50.00131	15.6	65.21	mg/L	99.2	70	130	1.72	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05113	mg/L	102.3	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0015	0.0015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.0501		.04971	mg/L	99.2	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.0501	.0032	.05968	mg/L	112.7	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.0501	.0032	.05866	mg/L	110.7	70	130	1.72	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.0501	.0114	.06829	mg/L	113.6	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.0501	.0114	.06698	mg/L	110.9	70	130	1.94	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.05117	mg/L	102.3	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0015	0.0015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.0011	0.0011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.0501		.05014	mg/L	100.1	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.0501	.02	.07024	mg/L	100.3	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.0501	.02	.07237	mg/L	104.5	70	130	2.99	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.0501	106	107.14	mg/L	2275.4	70	130			M3
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.0501	106	106.74	mg/L	1477	70	130	0.37	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361308													
WG361308ICV	ICV	03/27/14 12:34	HG140325-4	10		10.1	ng/L	101	79	121			
WG361308ICB	ICB	03/27/14 12:39				U	ng/L		-0.5	0.5			
WG361308PQV	PQV	03/27/14 12:44	HG140325-6	.5		.52	ng/L	104	70	130			
WG361308LFB	LFB	03/27/14 12:49	HG140325-5	2		1.98	ng/L	99	71	125			
L17275-06MS	MS	03/27/14 13:20	HG140325-5	2	U	2.16	ng/L	108	71	125			
L17275-06MSD	MSD	03/27/14 13:25	HG140325-5	2	U	2.16	ng/L	108	71	125	0	24	
WG361308CCV1	CCV	03/27/14 13:30	HG140325-4	10		10.3	ng/L	103	76.5	123.4			
WG361308CCB1	CCB	03/27/14 13:35				U	ng/L		-0.5	0.5			
WG361308CCV2	CCV	03/27/14 14:21	HG140325-4	10		10.5	ng/L	105	76.5	123.4			
WG361308CCB2	CCB	03/27/14 14:26				U	ng/L		-0.5	0.5			
L17284-02MS	MS	03/27/14 14:41	HG5XPREP	50	1	11.8	ng/L	104.9	71	125			
L17284-02MSD	MSD	03/27/14 14:46	HG5XPREP	50	1	11.6	ng/L	102.9	71	125	1.71	24	
WG361308CCV3	CCV	03/27/14 15:17	HG140325-4	10		10.4	ng/L	104	76.5	123.4			
WG361308CCB3	CCB	03/27/14 15:22				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L17275***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361393													
WG361393ICV	ICV	03/28/14 15:59	HG140325-4	10		9.87	ng/L	98.7	79	121			
WG361393ICB	ICB	03/28/14 16:04				U	ng/L		-0.5	0.5			
WG361393PQV	PQV	03/28/14 16:09	HG140325-6	.5		.56	ng/L	112	70	130			
WG361393LFB	LFB	03/28/14 16:14	HG140325-5	2		2	ng/L	100	71	125			
L17275-02MS	MS	03/28/14 16:29	HG140325-5	2	.5	2.58	ng/L	104	71	125			
L17275-02MSD	MSD	03/28/14 16:34	HG140325-5	2	.5	2.61	ng/L	105.5	71	125	1.16	24	
WG361393CCV1	CCV	03/28/14 16:59	HG140325-4	10		10.6	ng/L	106	76.5	123.4			
WG361393CCB1	CCB	03/28/14 17:04				U	ng/L		-0.5	0.5			
WG361393CCV2	CCV	03/28/14 17:55	HG140325-4	10		10.4	ng/L	104	76.5	123.4			
WG361393CCB2	CCB	03/28/14 18:00				U	ng/L		-0.5	0.5			
L17348-01MS	MS	03/28/14 18:10	HG140325-5	2	9.1	10.9	ng/L	90.5	71	125			
L17348-01MSD	MSD	03/28/14 18:15	HG140325-5	2	9.1	10.9	ng/L	90	71	125	0	24	
WG361393CCV3	CCV	03/28/14 18:40	HG140325-4	10		10.4	ng/L	104	76.5	123.4			
WG361393CCB3	CCB	03/28/14 18:46				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.02006		.01941	mg/L	96.8	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0015	0.0015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05		.04556	mg/L	91.1	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05	.0036	.05495	mg/L	102.7	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05	.0036	.05405	mg/L	100.9	70	130	1.65	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05	.002	.05604	mg/L	108.1	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05	.002	.05286	mg/L	101.7	70	130	5.84	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.02006		.01883	mg/L	93.9	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0015	0.0015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.0011	0.0011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05		.04644	mg/L	92.9	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05	.0108	.05923	mg/L	96.9	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05	.0108	.0585	mg/L	95.4	70	130	1.24	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05	U	.0484	mg/L	96.8	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05	U	.0479	mg/L	95.8	70	130	1.04	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04856	mg/L	97.1	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0018	0.0018			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05		.04679	mg/L	93.6	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05	U	.0507	mg/L	101.4	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05	U	.05048	mg/L	101	70	130	0.43	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05	.0018	.05047	mg/L	97.3	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05	.0018	.05033	mg/L	97.1	70	130	0.28	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04883	mg/L	97.7	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0018	0.0018			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00132	0.00132			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05		.04811	mg/L	96.2	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05	U	.04499	mg/L	90	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05	U	.04539	mg/L	90.8	70	130	0.89	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05	.345	.3982	mg/L	106.4	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05	.345	.4086	mg/L	127.2	70	130	2.58	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361383													
WG361383ICV	ICV	03/27/14 20:57	WI140116-3	2.416		2.535	mg/L	104.9	90	110			
WG361383ICB	ICB	03/27/14 20:59				U	mg/L		-0.06	0.06			
WG361387													
WG361387LFB1	LFB	03/27/14 23:04	WI140215-3	2		2.112	mg/L	105.6	90	110			
L17273-08AS	AS	03/27/14 23:23	WI140215-3	2	.05	2.23	mg/L	109	90	110			
L17273-09DUP	DUP	03/27/14 23:26			.64	.644	mg/L				0.6	20	
WG361387LFB2	LFB	03/27/14 23:39	WI140215-3	2		2.092	mg/L	104.6	90	110			
L17275-05AS	AS	03/27/14 23:41	WI140215-3	2	.07	2.277	mg/L	110.4	90	110			
L17275-06DUP	DUP	03/27/14 23:44			.28	.274	mg/L				2.2	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361341													
WG361341ICV	ICV	03/27/14 11:36	WI131021-1	1.003		1.06	mg/L	105.7	90	110			
WG361341ICB	ICB	03/27/14 11:39				U	mg/L		-0.15	0.15			
WG361347													
WG361347LFB1	LFB	03/27/14 11:58	WI140113-8	1		1.017	mg/L	101.7	90	110			
WG361347LFB2	LFB	03/27/14 12:30	WI140113-8	1		1.03	mg/L	103	90	110			
L17274-13AS	AS	03/27/14 12:32	WI140113-8	1	.48	1.491	mg/L	101.1	90	110			
L17274-14DUP	DUP	03/27/14 12:34			U	U	mg/L				0	20	RA
WG361354													
WG361354LFB1	LFB	03/27/14 13:10	WI140113-8	1		1.088	mg/L	108.8	90	110			
L17275-10AS	AS	03/27/14 13:12	WI140113-8	1	U	.995	mg/L	99.5	90	110			
L17275-11DUP	DUP	03/27/14 13:14			U	U	mg/L				0	20	RA
WG361354LFB2	LFB	03/27/14 13:42	WI140113-8	1		1.094	mg/L	109.4	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361080													
WG361080LCSW1	LCSW	03/24/14 13:10	PCN40852	6		5.96	units	99.3					
WG361080LCSW4	LCSW	03/24/14 16:30	PCN40852	6		5.96	units	99.3					
L17275-11DUP	DUP	03/24/14 18:37			8.2	8.19	units				0.1	20	
L17282-01DUP	DUP	03/24/14 20:12			8.2	8.19	units				0.1	20	
WG361080LCSW7	LCSW	03/24/14 20:15	PCN40852	6		5.98	units	99.7					
WG361080LCSW10	LCSW	03/25/14 0:11	PCN40852	6		5.99	units	99.8					
WG361080LCSW13	LCSW	03/25/14 3:35	PCN40852	6		5.98	units	99.7					

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361388													
WG361388ICV	ICV	03/27/14 23:01	WI140224-3	.65228		.687	mg/L	105.3	90	110			
WG361388ICB	ICB	03/27/14 23:04				U	mg/L		-0.03	0.03			
WG361389													
WG361328LRB	LRB	03/27/14 23:53				U	mg/L		-0.03	0.03			
WG361328LFB	LFB	03/27/14 23:54	WI140326-3	.5		.515	mg/L	103	90	110			
L17275-01LFM	LFM	03/28/14 0:13	WI140326-3	.5	U	.527	mg/L	105.4	90	110			
L17275-02DUP	DUP	03/28/14 0:15			.01	U	mg/L				200	20	RA
WG361457													
WG361457ICV	ICV	03/28/14 21:54	WI140224-3	.65228		.704	mg/L	107.9	90	110			
WG361457ICB	ICB	03/28/14 21:57				U	mg/L		-0.03	0.03			
WG361423LRB	LRB	03/28/14 21:58				U	mg/L		-0.03	0.03			
WG361423LFB	LFB	03/28/14 21:59	WI140326-3	.5		.527	mg/L	105.4	90	110			
L17275-12LFM	LFM	03/28/14 22:01	WI140326-3	.5	U	.511	mg/L	102.2	90	110			
L17275-13DUP	DUP	03/28/14 22:03			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L17275***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	20		19.37	mg/L	96.9	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.6	0.6			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	99.99364		99.5	mg/L	99.5	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	199.98728	21.4	227.6	mg/L	103.1	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	199.98728	21.4	231	mg/L	104.8	85	115	1.48	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	99.99364	4.4	103.4	mg/L	99	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	99.99364	4.4	108.4	mg/L	104	85	115	4.72	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	20		19.24	mg/L	96.2	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.6	0.6			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.44	0.44			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	99.99364		99.15	mg/L	99.2	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	99.99364	4.7	105	mg/L	100.3	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	99.99364	4.7	104.2	mg/L	99.5	70	130	0.76	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	99.99364	.9	98.36	mg/L	97.5	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	99.99364	.9	99.99	mg/L	99.1	70	130	1.64	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360922													
WG360922PBW	PBW	03/20/14 11:46				U	mg/L		-20	20			
WG360922LCSW	LCSW	03/20/14 11:48	PCN45339	260		244	mg/L	93.8	80	120			
L17253-02DUP	DUP	03/20/14 12:17			790	798	mg/L				1	10	
WG360981													
WG360981PBW	PBW	03/21/14 9:00				U	mg/L		-20	20			
WG360981LCSW	LCSW	03/21/14 9:01	PCN45339	260		266	mg/L	102.3	80	120			
L17354-01DUP	DUP	03/21/14 9:44			160	158	mg/L				1.3	10	
WG361035													
WG361035PBW	PBW	03/21/14 15:38				U	mg/L		-20	20			
WG361035LCSW	LCSW	03/21/14 15:40	PCN45340	260		254	mg/L	97.7	80	120			
L17275-14DUP	DUP	03/21/14 16:27			380	384	mg/L				1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361016													
WG361016PBW	PBW	03/21/14 12:18				U	mg/L		-15	15			
WG361016LCSW	LCSW	03/21/14 12:19	PCN45339	160		134	mg/L	83.8	80	120			
L17354-01DUP	DUP	03/21/14 12:49			U	5	mg/L				200	10	RA
WG361048													
WG361048PBW	PBW	03/22/14 11:00				U	mg/L		-15	15			
WG361048LCSW	LCSW	03/22/14 11:02	PCN45340	160		152	mg/L	95	80	120			
L17275-11DUP	DUP	03/22/14 11:31			U	U	mg/L				0	10	RA
L17282-01DUP	DUP	03/22/14 12:00			20	19	mg/L				5.1	10	RA

SPF Water Engineering

ACZ Project ID: ***L17275***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.98	mg/L	99	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.3	0.3			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1.0009		1.05	mg/L	104.9	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2.0018	U	2.09	mg/L	104.4	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2.0018	U	2.1	mg/L	104.9	85	115	0.48	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1.0009	U	1.04	mg/L	103.9	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1.0009	U	1.07	mg/L	106.9	85	115	2.84	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.97	mg/L	98.5	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.3	0.3			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.22	0.22			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1.0009		1.07	mg/L	106.9	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1.0009	U	1.08	mg/L	107.9	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1.0009	U	1.07	mg/L	106.9	70	130	0.93	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1.0009	U	1.07	mg/L	106.9	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1.0009	U	1.09	mg/L	108.9	70	130	1.85	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05036	mg/L	100.7	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04724	mg/L	94.4	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	.0059	.06393	mg/L	115.9	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	.0059	.06217	mg/L	112.4	70	130	2.79	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	U	.05615	mg/L	112.2	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	U	.05537	mg/L	110.6	70	130	1.4	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04968	mg/L	99.4	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.05604	mg/L	112	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	.0039	.04826	mg/L	88.6	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	.0039	.04899	mg/L	90.1	70	130	1.5	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	U	.05262	mg/L	105.1	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	U	.05356	mg/L	107	70	130	1.77	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.02002		.01986	mg/L	99.2	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.00015	0.00015			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.01001		.009486	mg/L	94.8	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.01001	U	.009627	mg/L	96.2	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.01001	U	.009356	mg/L	93.5	70	130	2.86	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.01001	U	.008961	mg/L	89.5	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.01001	U	.008818	mg/L	88.1	70	130	1.61	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.02002		.01947	mg/L	97.3	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.00015	0.00015			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00011	0.00011			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.01001		.009822	mg/L	98.1	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.01001	U	.00965	mg/L	96.4	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.01001	U	.00947	mg/L	94.6	70	130	1.88	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.01001	U	.0094	mg/L	93.9	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.01001	U	.00929	mg/L	92.8	70	130	1.18	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	100		98.09	mg/L	98.1	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.6	0.6			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	100.0393		99.63	mg/L	99.6	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	200.0786	85.4	287.6	mg/L	101.1	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	200.0786	85.4	291.6	mg/L	103.1	85	115	1.38	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	100.0393	44.8	142.2	mg/L	97.4	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	100.0393	44.8	148.3	mg/L	103.5	85	115	4.2	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	100		98.22	mg/L	98.2	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.6	0.6			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.44	0.44			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	100.0393		101	mg/L	101	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	100.0393	20.5	122.4	mg/L	101.9	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	100.0393	20.5	121.9	mg/L	101.4	70	130	0.41	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	100.0393	41.6	142.1	mg/L	100.5	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	100.0393	41.6	144.9	mg/L	103.3	70	130	1.95	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.9822	mg/L	99.1	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.015	0.015			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	.5		.4966	mg/L	99.3	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	1	1.62	2.556	mg/L	93.6	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	1	1.62	2.582	mg/L	96.2	85	115	1.01	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	.5	1.81	2.246	mg/L	87.2	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	.5	1.81	2.325	mg/L	103	85	115	3.46	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.9658	mg/L	98.3	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.015	0.015			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.011	0.011			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	.5		.4879	mg/L	97.6	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	.5	.202	.6917	mg/L	97.9	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	.5	.202	.6885	mg/L	97.3	70	130	0.46	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	.5	.391	.8672	mg/L	95.2	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	.5	.391	.8823	mg/L	98.3	70	130	1.73	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361148													
WG361148LFB1	LFB	03/25/14 12:54	WI140306-2	30		30.2	mg/L	100.7	90	110			
L17232-03DUP	DUP	03/25/14 17:41			23.1	23.1	mg/L				0	20	
L17232-04AS	AS	03/25/14 18:17	WI140306-2	30	19.7	49.6	mg/L	99.7	90	110			
WG361148LFB2	LFB	03/25/14 21:34	WI140306-2	30		30.2	mg/L	100.7	90	110			
L17275-04DUP	DUP	03/25/14 22:10			47	47	mg/L				0	20	
L17275-05AS	AS	03/25/14 23:21	WI140306-2	30	47.1	76.4	mg/L	97.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05316	mg/L	106.3	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.0502		.04965	mg/L	98.9	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.0502	U	.05571	mg/L	111	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.0502	U	.0546	mg/L	108.8	70	130	2.01	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.0502	U	.05566	mg/L	110.9	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.0502	U	.05551	mg/L	110.6	70	130	0.27	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.05319	mg/L	106.4	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.0502		.0509	mg/L	101.4	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.0502	U	.05296	mg/L	105.5	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.0502	U	.05198	mg/L	103.5	70	130	1.87	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.0502	.0003	.05146	mg/L	101.9	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.0502	.0003	.052	mg/L	103	70	130	1.04	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05015		.05192	mg/L	103.5	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04721	mg/L	94.3	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	U	.05077	mg/L	101.4	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	U	.04988	mg/L	99.7	70	130	1.77	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	.0007	.05255	mg/L	103.6	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	.0007	.0506	mg/L	99.7	70	130	3.78	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05015		.0504	mg/L	100.5	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.04829	mg/L	96.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	.0002	.04867	mg/L	96.8	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	.0002	.04811	mg/L	95.7	70	130	1.16	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	U	.0491	mg/L	98.1	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	U	.0488	mg/L	97.5	70	130	0.61	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.9045	mg/L	95.2	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.015	0.015			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	1		.9658	mg/L	96.6	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	2	U	1.919	mg/L	96	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	2	U	1.931	mg/L	96.6	85	115	0.62	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	1	.005	.9614	mg/L	95.6	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	1	.005	.9926	mg/L	98.8	85	115	3.19	20	

SPF Water Engineering

ACZ Project ID: ***L17275***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.9312	mg/L	96.6	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.015	0.015			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.011	0.011			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	1		.9875	mg/L	98.8	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	1	.009	.9982	mg/L	98.9	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	1	.009	.9919	mg/L	98.3	70	130	0.63	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	1	.007	.9726	mg/L	96.6	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	1	.007	.9853	mg/L	97.8	70	130	1.3	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.05115	mg/L	102.3	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0003	0.0003			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05		.05064	mg/L	101.3	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05	.0047	.0602	mg/L	111	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05	.0047	.05935	mg/L	109.3	70	130	1.42	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05	.0062	.06234	mg/L	112.3	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05	.0062	.06237	mg/L	112.3	70	130	0.05	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.0508	mg/L	101.6	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0003	0.0003			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00022	0.00022			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05		.05127	mg/L	102.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05	.0045	.05841	mg/L	107.8	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05	.0045	.05807	mg/L	107.1	70	130	0.58	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05	.004	.057	mg/L	106	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05	.004	.05792	mg/L	107.8	70	130	1.6	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361239													
WG361239ICV	ICV	03/27/14 15:22	MS140218-2	.05		.04883	mg/L	97.7	90	110			
WG361239ICB	ICB	03/27/14 15:25				U	mg/L		-0.0006	0.0006			
WG361239LFB	LFB	03/27/14 15:29	MS140320-2	.05005		.04976	mg/L	99.4	85	115			
L17275-05AS	AS	03/27/14 15:49	MS140320-2	.05005	.0328	.08965	mg/L	113.6	70	130			
L17275-05ASD	ASD	03/27/14 15:53	MS140320-2	.05005	.0328	.0895	mg/L	113.3	70	130	0.17	20	
L17320-01AS	AS	03/27/14 16:37	MS140320-2	.05005	U	.057	mg/L	113.9	70	130			
L17320-01ASD	ASD	03/27/14 16:47	MS140320-2	.05005	U	.05662	mg/L	113.1	70	130	0.67	20	

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ACZ Project ID: ***L17275***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361380													
WG361380ICV	ICV	03/28/14 0:07	MS140218-2	.05		.04882	mg/L	97.6	90	110			
WG361380ICB	ICB	03/28/14 0:11				U	mg/L		-0.0006	0.0006			
WG361214LRB	LRB	03/28/14 0:14				U	mg/L		-0.00044	0.00044			
WG361214LFB	LFB	03/28/14 0:18	MS140320-2	.05005		.05078	mg/L	101.5	85	115			
L17275-08LFM	LFM	03/28/14 0:58	MS140320-2	.05005	.0422	.09132	mg/L	98.1	70	130			
L17275-08LFMD	LFMD	03/28/14 1:02	MS140320-2	.05005	.0422	.09208	mg/L	99.7	70	130	0.83	20	
L17321-02LFM	LFM	03/28/14 1:43	MS140320-2	.05005	.0019	.05324	mg/L	102.6	70	130			
L17321-02LFMD	LFMD	03/28/14 1:46	MS140320-2	.05005	.0019	.05372	mg/L	103.5	70	130	0.9	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360973													
WG360973ICV	ICV	03/21/14 11:24	II140220-1	2		1.942	mg/L	97.1	95	105			
WG360973ICB	ICB	03/21/14 11:30				U	mg/L		-0.03	0.03			
WG360973LFB	LFB	03/21/14 11:43	II140317-2	.5005		.496	mg/L	99.1	85	115			
L17261-01AS	AS	03/21/14 11:49	II140317-2	1.001	.06	1.072	mg/L	101.1	85	115			
L17261-01ASD	ASD	03/21/14 11:52	II140317-2	1.001	.06	1.098	mg/L	103.7	85	115	2.4	20	
L17332-01AS	AS	03/21/14 13:01	II140317-2	.5005	U	.496	mg/L	99.1	85	115			
L17332-01ASD	ASD	03/21/14 13:04	II140317-2	.5005	U	.521	mg/L	104.1	85	115	4.92	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361188													
WG361188ICV	ICV	03/26/14 9:50	II140228-1	2		1.933	mg/L	96.7	95	105			
WG361188ICB	ICB	03/26/14 9:56				U	mg/L		-0.03	0.03			
WG361129LRB	LRB	03/26/14 10:09				U	mg/L		-0.022	0.022			
WG361129LFB	LFB	03/26/14 10:12	II140317-2	.5005		.511	mg/L	102.1	85	115			
L17275-01LFM	LFM	03/26/14 10:18	II140317-2	.5005	U	.517	mg/L	103.3	70	130			
L17275-01LFMD	LFMD	03/26/14 10:21	II140317-2	.5005	U	.511	mg/L	102.1	70	130	1.17	20	
L17304-01LFM	LFM	03/26/14 11:24	II140317-2	.5005	.03	.546	mg/L	103.1	70	130			
L17304-01LFMD	LFMD	03/26/14 11:27	II140317-2	.5005	.03	.54	mg/L	101.9	70	130	1.1	20	

SPF Water Engineering ACZ Project ID: ***L17275***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-01	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361148	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361016	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-02	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361148	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361016	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-03	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361148	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-04	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-05	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361393	Mercury, total	M1631, Atomic Fluorescence	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-06	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361148	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-08	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-09	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361347	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: ***L17275***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-10	WG360973	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361380	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361354	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-11	WG361380	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361354	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361389	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17275***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-12	WG361380	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361354	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361457	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17275-13	WG361380	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361354	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361457	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17275***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17275-14	WG361380	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361114	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361357	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361148	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361354	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361457	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361048	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 1st Quarter 2014 Sampling

ACZ Project ID: L17275
Date Received: 03/19/2014 10:05
Received By: mtb
Date Printed: 3/19/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?		X	

L17275-04 Container B1443090 (HG-1631 D): This container was received broken and the associated analysis were removed from the project.

9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19306	0.2	13	Yes
NA19307	0.9	13	Yes
NA19308	1.4	13	Yes
NA19309	0.9	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 1st Quarter 2014 Sampling

ACZ Project ID:	L17275
Date Received:	03/19/2014 10:05
Received By:	mtb
Date Printed:	3/19/2014

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L7275 CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 1st Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Sagebrush Spring	3/16/14 9:30		8	X							
Government Corral Spring	3/16/14 10:30		8	X							
Poison Spring	3/16/14 11:45		8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/18/14 4:00pm		3-19-14 10:00

1/4

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L17275 Chain of Custody

ACZ Laboratories, Inc. L17275 — CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 1st Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ Spec.
Deposit Stock Tank	3/16/14 12:35		8	X	
Deposit Duplicate	3/16/14 12:45		8	X	
Whiskey Spring	3/16/14 15:25		8	X	
Merc. Transfer/Trip Blank	3/16/14 17:25		1		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/18/14 4:00pm		3.19.1410:00

2/4

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc. L17275 — CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 1st Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW
Twin Springs North	3/16/14 16:10		8	X
Twin Springs South	3/16/14 17:05		8	X
Sourdough Upper	3/17/14 11:10		8	X
Sourdough Lower	3/17/14 12:30		8	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/18/14 4:00 pm		3.19.14 10:00

3/4

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc. L17275

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
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Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 1st Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ Spec.	**SPF-2014-GW					
Equipment Blank	3/17/14 13:00		8	X							
Transfer Blank	3/17/14 13:20		6			X					
Prod-1	3/16/14 13:20		8	X							
Merc. Transfer/Trip Blank	3/17/14 12:45		1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Process as detailed in SPF-2014-GW except no Green dot bottles (i.e.: no dissolved metals and no dissolved low level mercury)

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/18/14 4:00 pm		3-19-14 10:00

4/4

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 11, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 1st Quarter 2014 Sampli
ACZ Project ID: L17362

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 21, 2014. This project has been assigned to ACZ's project number, L17362. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L17362. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 11, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

April 11, 2014

Project ID: Calico 1st Quarter 2014 Sampli
ACZ Project ID: L17362

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 8 ground water samples from SPF Water Engineering on March 21, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L17362. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L17362. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-4

ACZ Sample ID: ***L17362-01***
Date Sampled: *03/18/14 10:50*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 15:31	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/27/14 15:12	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 12:28	bsu
Total Hot Plate Digestion	M200.2 ICP								03/27/14 12:01	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								04/07/14 14:38	scp

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-4

ACZ Sample ID: ***L17362-01***
Date Sampled: *03/18/14 10:50*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.11	B		mg/L	0.03	0.2	03/25/14 10:14	jjc
Aluminum, total	M200.7 ICP	1	6.11			mg/L	0.03	0.2	03/28/14 11:23	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/02/14 0:14	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/01/14 20:21	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0127			mg/L	0.0002	0.001	04/02/14 0:14	las
Arsenic, total	M200.8 ICP-MS	1	0.0148			mg/L	0.0002	0.001	04/01/14 20:21	las
Barium, dissolved	M200.7 ICP	1		U	*	mg/L	0.003	0.02	03/25/14 10:14	jjc
Barium, total	M200.7 ICP	1	0.017	B		mg/L	0.003	0.02	03/28/14 11:23	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:14	las
Beryllium, total	M200.8 ICP-MS	1	0.00032			mg/L	0.00005	0.0003	04/01/14 20:21	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:14	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:17	aeb
Boron, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	03/25/14 10:14	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	03/28/14 11:23	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:14	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:21	las
Calcium, dissolved	M200.7 ICP	1	7.3			mg/L	0.1	0.5	03/25/14 10:14	jjc
Calcium, total	M200.7 ICP	1	11.6			mg/L	0.1	0.5	03/28/14 11:23	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/02/14 0:14	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/01/14 20:21	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00025	B		mg/L	0.00005	0.0003	04/02/14 0:14	las
Cobalt, total	M200.8 ICP-MS	1	0.00028	B		mg/L	0.00005	0.0003	04/01/14 20:21	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:14	las
Copper, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	04/01/14 20:21	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:14	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:23	jjc
Iron, dissolved	M200.7 ICP	1	0.25			mg/L	0.02	0.05	03/25/14 10:14	jjc
Iron, total	M200.7 ICP	1	6.06			mg/L	0.02	0.05	03/28/14 11:23	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:14	las
Lead, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0005	04/01/14 20:21	las
Lithium, dissolved	M200.7 ICP	1	0.081		*	mg/L	0.008	0.04	03/25/14 10:14	jjc
Lithium, total	M200.7 ICP	1	0.094			mg/L	0.008	0.04	03/28/14 11:23	jjc
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	03/25/14 10:14	jjc
Magnesium, total	M200.7 ICP	1	1.3			mg/L	0.2	1	03/28/14 11:23	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0357			mg/L	0.0005	0.003	04/02/14 0:14	las
Manganese, total	M200.8 ICP-MS	1	0.0640			mg/L	0.0005	0.003	04/01/14 20:21	las
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/01/14 16:21	las
Mercury, total	M1631, Atomic Fluorescence	5	4			ng/L	1	3	03/31/14 12:27	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0105			mg/L	0.0005	0.003	04/02/14 0:14	las
Molybdenum, total	M200.8 ICP-MS	1	0.0109			mg/L	0.0005	0.003	04/01/14 20:21	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/02/14 0:14	las
Nickel, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0006	0.003	04/01/14 20:21	las
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	03/25/14 10:14	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-4

ACZ Sample ID: ***L17362-01***
Date Sampled: *03/18/14 10:50*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	03/28/14 11:23	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:14	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:23	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	04/02/14 0:14	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	04/01/14 20:21	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:14	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:21	las
Sodium, dissolved	M200.7 ICP	1	158			mg/L	0.2	1	03/25/14 10:14	jjc
Sodium, total	M200.7 ICP	1	177			mg/L	0.2	1	03/28/14 11:23	jjc
Strontium, dissolved	M200.7 ICP	1	0.035			mg/L	0.005	0.03	03/25/14 10:14	jjc
Strontium, total	M200.7 ICP	1	0.060			mg/L	0.005	0.03	03/28/14 11:23	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:14	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:21	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/02/14 0:14	las
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	04/09/14 19:38	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:14	jjc
Titanium, total	M200.7 ICP	1	0.029	B		mg/L	0.005	0.03	03/28/14 11:23	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:14	las
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	04/01/14 20:21	las
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	04/02/14 0:14	las
Vanadium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	04/01/14 20:21	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:14	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	03/28/14 11:23	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-4

ACZ Sample ID: ***L17362-01***
Date Sampled: *03/18/14 10:50*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	177			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1	4	B		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	182		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	5	40.0		*	mg/L	2.5	12.5	03/26/14 19:18	tcd
Conductivity @25C	SM2510B	1	841			umhos/cm	1	10	03/26/14 17:44	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:21	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 16:49	mpb
Fluoride	M300.0 - Ion Chromatography	5	1.86	B	*	mg/L	0.5	2.5	03/26/14 19:18	tcd
Hardness as CaCO3	SM2340B - Calculation		20			mg/L	1	7	04/11/14 8:13	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/28/14 22:53	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.10	B	*	mg/L	0.05	0.5	03/27/14 16:05	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	21			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	04/05/14 13:46	pjb
Residue, Filterable (TDS) @180C	SM2540C	2	490		*	mg/L	20	40	03/25/14 11:27	id
Residue, Non-Filterable (TSS) @105C	SM2540D	4	190		*	mg/L	20	80	03/25/14 12:06	enb
Sulfate	M300.0 - Ion Chromatography	5	133			mg/L	2.5	12.5	03/26/14 19:18	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L17362-02***
Date Sampled: *03/18/14 11:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 15:47	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/27/14 15:21	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 12:43	bsu
Total Hot Plate Digestion	M200.2 ICP								03/27/14 12:12	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								03/27/14 11:58	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L17362-02***
Date Sampled: *03/18/14 11:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.06	B		mg/L	0.03	0.2	03/25/14 10:23	jjc
Aluminum, total	M200.7 ICP	1	1.09		*	mg/L	0.03	0.2	03/28/14 11:26	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/02/14 0:24	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/01/14 20:25	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0109			mg/L	0.0002	0.001	04/02/14 0:24	las
Arsenic, total	M200.8 ICP-MS	1	0.0111			mg/L	0.0002	0.001	04/01/14 20:25	las
Barium, dissolved	M200.7 ICP	1		U	*	mg/L	0.003	0.02	03/25/14 10:23	jjc
Barium, total	M200.7 ICP	1	0.009	B		mg/L	0.003	0.02	03/28/14 11:26	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:24	las
Beryllium, total	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	04/01/14 20:25	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:23	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:20	aeb
Boron, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	03/25/14 10:23	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	03/28/14 11:26	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:24	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:25	las
Calcium, dissolved	M200.7 ICP	1	3.1			mg/L	0.1	0.5	03/25/14 10:23	jjc
Calcium, total	M200.7 ICP	1	4.1			mg/L	0.1	0.5	03/28/14 11:26	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/02/14 0:24	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/01/14 20:25	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00047			mg/L	0.00005	0.0003	04/02/14 0:24	las
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	04/01/14 20:25	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:24	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/01/14 20:25	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:23	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:26	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/25/14 10:23	jjc
Iron, total	M200.7 ICP	1	0.41		*	mg/L	0.02	0.05	03/28/14 11:26	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:24	las
Lead, total	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0005	04/01/14 20:25	las
Lithium, dissolved	M200.7 ICP	1	0.078		*	mg/L	0.008	0.04	03/25/14 10:23	jjc
Lithium, total	M200.7 ICP	1	0.094			mg/L	0.008	0.04	03/28/14 11:26	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	03/25/14 10:23	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	03/28/14 11:26	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0055			mg/L	0.0005	0.003	04/02/14 0:24	las
Manganese, total	M200.8 ICP-MS	1	0.0101			mg/L	0.0005	0.003	04/01/14 20:25	las
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/01/14 16:36	las
Mercury, total	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	03/31/14 12:32	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	04/02/14 0:24	las
Molybdenum, total	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	04/01/14 20:25	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/02/14 0:24	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/01/14 20:25	las
Potassium, dissolved	M200.7 ICP	1	0.4	B		mg/L	0.2	1	03/25/14 10:23	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L17362-02***
Date Sampled: *03/18/14 11:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.2	1	03/28/14 11:26	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:23	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:26	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	04/02/14 0:24	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	04/01/14 20:25	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:24	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:25	las
Sodium, dissolved	M200.7 ICP	1	129			mg/L	0.2	1	03/25/14 10:23	jjc
Sodium, total	M200.7 ICP	1	152			mg/L	0.2	1	03/28/14 11:26	jjc
Strontium, dissolved	M200.7 ICP	1	0.019	B		mg/L	0.005	0.03	03/25/14 10:23	jjc
Strontium, total	M200.7 ICP	1	0.029	B		mg/L	0.005	0.03	03/28/14 11:26	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:24	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:25	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/02/14 0:24	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/01/14 20:25	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:23	jjc
Titanium, total	M200.7 ICP	1	0.013	B		mg/L	0.005	0.03	03/28/14 11:26	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:24	las
Uranium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	04/01/14 20:25	las
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	04/02/14 0:24	las
Vanadium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0002	0.001	04/01/14 20:25	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:23	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/28/14 11:26	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L17362-02***
Date Sampled: *03/18/14 11:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	162			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1	9	B		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	172		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	26.9		*	mg/L	0.5	2.5	03/26/14 20:12	tcd
Conductivity @25C	SM2510B	1	696			umhos/cm	1	10	03/26/14 17:53	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:41	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 16:50	mpb
Fluoride	M300.0 - Ion Chromatography	1	2.23		*	mg/L	0.1	0.5	03/26/14 20:12	tcd
Hardness as CaCO3	SM2340B - Calculation		8			mg/L	1	7	04/11/14 8:14	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	03/28/14 22:54	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 16:06	tcd
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	21			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.07		*	mg/L	0.01	0.05	04/05/14 13:49	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260		*	mg/L	10	20	03/25/14 11:29	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1	33		*	mg/L	5	20	03/25/14 12:10	enb
Sulfate	M300.0 - Ion Chromatography	1	88.3			mg/L	0.5	2.5	03/26/14 20:12	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L17362-03***
Date Sampled: *03/18/14 12:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:03	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/27/14 15:31	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 12:50	bsu
Total Hot Plate Digestion	M200.2 ICP-MS				*				04/07/14 14:48	scp
Total Hot Plate Digestion	M200.2 ICP								03/27/14 12:24	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L17362-03***
Date Sampled: *03/18/14 12:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/25/14 10:26	jjc
Aluminum, total	M200.7 ICP	1	2.90		*	mg/L	0.03	0.2	03/28/14 11:29	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/02/14 0:27	las
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	04/01/14 20:28	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.1887			mg/L	0.0002	0.001	04/02/14 0:27	las
Arsenic, total	M200.8 ICP-MS	1	0.1910			mg/L	0.0002	0.001	04/01/14 20:28	las
Barium, dissolved	M200.7 ICP	1	0.014	B	*	mg/L	0.003	0.02	03/25/14 10:26	jjc
Barium, total	M200.7 ICP	1	0.057			mg/L	0.003	0.02	03/28/14 11:29	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	04/02/14 0:27	las
Beryllium, total	M200.8 ICP-MS	1	0.00042			mg/L	0.00005	0.0003	04/01/14 20:28	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:26	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:23	aeb
Boron, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	03/25/14 10:26	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	03/28/14 11:29	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:27	las
Cadmium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	04/01/14 20:28	las
Calcium, dissolved	M200.7 ICP	1	34.4			mg/L	0.1	0.5	03/25/14 10:26	jjc
Calcium, total	M200.7 ICP	1	40.5			mg/L	0.1	0.5	03/28/14 11:29	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/02/14 0:27	las
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	04/01/14 20:28	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00086			mg/L	0.00005	0.0003	04/02/14 0:27	las
Cobalt, total	M200.8 ICP-MS	1	0.00144			mg/L	0.00005	0.0003	04/01/14 20:28	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:27	las
Copper, total	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	04/01/14 20:28	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:26	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:29	jjc
Iron, dissolved	M200.7 ICP	1	0.89			mg/L	0.02	0.05	03/25/14 10:26	jjc
Iron, total	M200.7 ICP	1	3.90		*	mg/L	0.02	0.05	03/28/14 11:29	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:27	las
Lead, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	04/01/14 20:28	las
Lithium, dissolved	M200.7 ICP	1	0.477		*	mg/L	0.008	0.04	03/25/14 10:26	jjc
Lithium, total	M200.7 ICP	1	0.543			mg/L	0.008	0.04	03/28/14 11:29	jjc
Magnesium, dissolved	M200.7 ICP	1	2.4			mg/L	0.2	1	03/25/14 10:26	jjc
Magnesium, total	M200.7 ICP	1	3.2			mg/L	0.2	1	03/28/14 11:29	jjc
Manganese, dissolved	M200.8 ICP-MS	5	0.432			mg/L	0.003	0.01	04/02/14 16:31	las
Manganese, total	M200.8 ICP-MS	5	0.490			mg/L	0.003	0.01	04/02/14 13:39	las
Mercury, dissolved	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	04/01/14 16:41	las
Mercury, total	M1631, Atomic Fluorescence	5	12			ng/L	1	3	03/31/14 12:37	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0267			mg/L	0.0005	0.003	04/02/14 0:27	las
Molybdenum, total	M200.8 ICP-MS	1	0.0266			mg/L	0.0005	0.003	04/01/14 20:28	las
Nickel, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0006	0.003	04/02/14 0:27	las
Nickel, total	M200.8 ICP-MS	1	0.0049			mg/L	0.0006	0.003	04/01/14 20:28	las
Potassium, dissolved	M200.7 ICP	1	8.3			mg/L	0.2	1	03/25/14 10:26	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L17362-03***
Date Sampled: *03/18/14 12:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	10.1			mg/L	0.2	1	03/28/14 11:29	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:26	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:29	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	04/02/14 0:27	las
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	04/01/14 20:28	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:27	las
Silver, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	04/01/14 20:28	las
Sodium, dissolved	M200.7 ICP	1	122			mg/L	0.2	1	03/25/14 10:26	jjc
Sodium, total	M200.7 ICP	1	138			mg/L	0.2	1	03/28/14 11:29	jjc
Strontium, dissolved	M200.7 ICP	1	0.118			mg/L	0.005	0.03	03/25/14 10:26	jjc
Strontium, total	M200.7 ICP	1	0.139			mg/L	0.005	0.03	03/28/14 11:29	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:27	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:28	las
Tin, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	04/02/14 0:27	las
Tin, total	M200.8 ICP-MS	2	0.0004	B	*	mg/L	0.0002	0.001	04/09/14 19:41	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:26	jjc
Titanium, total	M200.7 ICP	1	0.112			mg/L	0.005	0.03	03/28/14 11:29	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	04/02/14 0:27	las
Uranium, total	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0005	04/01/14 20:28	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0002	0.001	04/02/14 0:27	las
Vanadium, total	M200.8 ICP-MS	1	0.0044			mg/L	0.0002	0.001	04/01/14 20:28	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:26	jjc
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	03/28/14 11:29	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L17362-03***
Date Sampled: *03/18/14 12:40*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	76			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	76		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	12.2		*	mg/L	0.5	2.5	03/26/14 20:30	tcd
Conductivity @25C	SM2510B	1	893			umhos/cm	1	10	03/26/14 18:02	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:26	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/27/14 16:51	mpb
Fluoride	M300.0 - Ion Chromatography	1	1.65		*	mg/L	0.1	0.5	03/26/14 20:30	tcd
Hardness as CaCO3	SM2340B - Calculation		96			mg/L	1	7	04/11/14 8:14	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B		mg/L	0.02	0.1	03/28/14 22:55	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 16:09	tcd
pH (lab)	SM4500H+ B									
pH		1	7.7	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	22			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.94		*	mg/L	0.01	0.05	04/05/14 13:50	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	650		*	mg/L	10	20	03/25/14 11:31	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1	85		*	mg/L	5	20	03/25/14 12:13	enb
Sulfate	M300.0 - Ion Chromatography	10	305			mg/L	5	25	03/27/14 11:15	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: CYANIDE BLANK

ACZ Sample ID: ***L17362-04***
Date Sampled: *03/18/14 00:00*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:10	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 13:40	mpb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:27	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:09	mpb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L17362-05***
Date Sampled: *03/18/14 14:45*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:18	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 13:51	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 12:57	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								03/27/14 12:17	las
Total Hot Plate Digestion	M200.2 ICP								03/27/14 12:59	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L17362-05***
Date Sampled: *03/18/14 14:45*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/25/14 10:29	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	03/28/14 11:38	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/02/14 0:31	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/01/14 20:32	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0286			mg/L	0.0002	0.001	04/02/14 0:31	las
Arsenic, total	M200.8 ICP-MS	1	0.0282			mg/L	0.0002	0.001	04/01/14 20:32	las
Barium, dissolved	M200.7 ICP	1	0.025		*	mg/L	0.003	0.02	03/25/14 10:29	jjc
Barium, total	M200.7 ICP	1	0.031			mg/L	0.003	0.02	03/28/14 11:38	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:31	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:32	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:29	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:39	aeb
Boron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.01	0.05	03/25/14 10:29	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/28/14 11:38	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:31	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:32	las
Calcium, dissolved	M200.7 ICP	1	26.4			mg/L	0.1	0.5	03/25/14 10:29	jjc
Calcium, total	M200.7 ICP	1	30.4			mg/L	0.1	0.5	03/28/14 11:38	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	04/02/14 0:31	las
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/01/14 20:32	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	04/02/14 0:31	las
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	04/01/14 20:32	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:31	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/01/14 20:32	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:29	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:38	jjc
Iron, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	03/25/14 10:29	jjc
Iron, total	M200.7 ICP	1	0.16		*	mg/L	0.02	0.05	03/28/14 11:38	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:31	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:32	las
Lithium, dissolved	M200.7 ICP	1	0.058		*	mg/L	0.008	0.04	03/25/14 10:29	jjc
Lithium, total	M200.7 ICP	1	0.069			mg/L	0.008	0.04	03/28/14 11:38	jjc
Magnesium, dissolved	M200.7 ICP	1	2.8			mg/L	0.2	1	03/25/14 10:29	jjc
Magnesium, total	M200.7 ICP	1	3.3			mg/L	0.2	1	03/28/14 11:38	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	04/02/14 0:31	las
Manganese, total	M200.8 ICP-MS	1	0.0077			mg/L	0.0005	0.003	04/01/14 20:32	las
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/01/14 16:46	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	03/31/14 13:24	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0005	0.003	04/02/14 0:31	las
Molybdenum, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0005	0.003	04/01/14 20:32	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/02/14 0:31	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/01/14 20:32	las
Potassium, dissolved	M200.7 ICP	1	5.1			mg/L	0.2	1	03/25/14 10:29	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L17362-05***
Date Sampled: *03/18/14 14:45*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	03/28/14 11:38	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:29	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:38	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0041			mg/L	0.0001	0.0003	04/02/14 0:31	las
Selenium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0003	04/01/14 20:32	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:31	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:32	las
Sodium, dissolved	M200.7 ICP	1	34.6			mg/L	0.2	1	03/25/14 10:29	jjc
Sodium, total	M200.7 ICP	1	39			mg/L	0.2	1	03/28/14 11:38	jjc
Strontium, dissolved	M200.7 ICP	1	0.109			mg/L	0.005	0.03	03/25/14 10:29	jjc
Strontium, total	M200.7 ICP	1	0.121			mg/L	0.005	0.03	03/28/14 11:38	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:31	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:32	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/02/14 0:31	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/01/14 20:32	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:29	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/28/14 11:38	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	04/02/14 0:31	las
Uranium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	04/01/14 20:32	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0097			mg/L	0.0002	0.001	04/02/14 0:31	las
Vanadium, total	M200.8 ICP-MS	1	0.0111			mg/L	0.0002	0.001	04/01/14 20:32	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:29	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/28/14 11:38	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L17362-05***
Date Sampled: *03/18/14 14:45*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	110			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	110		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	8.22		*	mg/L	0.5	2.5	03/26/14 20:47	tcd
Conductivity @25C	SM2510B	1	355			umhos/cm	1	10	03/26/14 18:11	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:28	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:10	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.43	B	*	mg/L	0.1	0.5	03/26/14 20:47	tcd
Hardness as CaCO3	SM2340B - Calculation		78			mg/L	1	7	04/11/14 8:14	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.71			mg/L	0.02	0.1	03/28/14 22:56	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 16:11	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	22			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	04/05/14 13:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	250		*	mg/L	10	20	03/25/14 11:33	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/25/14 12:15	enb
Sulfate	M300.0 - Ion Chromatography	1	31.3			mg/L	0.5	2.5	03/26/14 20:47	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-1

ACZ Sample ID: ***L17362-06***
Date Sampled: *03/18/14 15:20*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:26	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 14:02	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 13:04	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								03/27/14 12:27	las
Total Hot Plate Digestion	M200.2 ICP								03/27/14 13:10	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-1

ACZ Sample ID: ***L17362-06***
Date Sampled: *03/18/14 15:20*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/25/14 10:32	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	03/28/14 11:42	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	04/02/14 0:34	las
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	04/01/14 20:42	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0294			mg/L	0.0002	0.001	04/02/14 0:34	las
Arsenic, total	M200.8 ICP-MS	1	0.0283			mg/L	0.0002	0.001	04/01/14 20:42	las
Barium, dissolved	M200.7 ICP	1	0.025		*	mg/L	0.003	0.02	03/25/14 10:32	jjc
Barium, total	M200.7 ICP	1	0.031			mg/L	0.003	0.02	03/28/14 11:42	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:34	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:42	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:32	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:42	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	03/25/14 10:32	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/28/14 11:42	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:34	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:42	las
Calcium, dissolved	M200.7 ICP	1	39.6			mg/L	0.1	0.5	03/25/14 10:32	jjc
Calcium, total	M200.7 ICP	1	47.2			mg/L	0.1	0.5	03/28/14 11:42	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/02/14 0:34	las
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/01/14 20:42	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00019	B		mg/L	0.00005	0.0003	04/02/14 0:34	las
Cobalt, total	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	04/01/14 20:42	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:34	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/01/14 20:42	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:32	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:42	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/25/14 10:32	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	03/28/14 11:42	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:34	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:42	las
Lithium, dissolved	M200.7 ICP	1	0.040		*	mg/L	0.008	0.04	03/25/14 10:32	jjc
Lithium, total	M200.7 ICP	1	0.048			mg/L	0.008	0.04	03/28/14 11:42	jjc
Magnesium, dissolved	M200.7 ICP	1	7.2			mg/L	0.2	1	03/25/14 10:32	jjc
Magnesium, total	M200.7 ICP	1	8.8			mg/L	0.2	1	03/28/14 11:42	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:34	las
Manganese, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.003	04/01/14 20:42	las
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	04/01/14 16:51	las
Mercury, total	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	03/31/14 13:29	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0005	0.003	04/02/14 0:34	las
Molybdenum, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	04/01/14 20:42	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/02/14 0:34	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/01/14 20:42	las
Potassium, dissolved	M200.7 ICP	1	5.2			mg/L	0.2	1	03/25/14 10:32	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-1

ACZ Sample ID: ***L17362-06***
Date Sampled: *03/18/14 15:20*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.2	1	03/28/14 11:42	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:32	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:42	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0003	04/02/14 0:34	las
Selenium, total	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0003	04/01/14 20:42	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:34	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:42	las
Sodium, dissolved	M200.7 ICP	1	23.3			mg/L	0.2	1	03/25/14 10:32	jjc
Sodium, total	M200.7 ICP	1	27			mg/L	0.2	1	03/28/14 11:42	jjc
Strontium, dissolved	M200.7 ICP	1	0.188			mg/L	0.005	0.03	03/25/14 10:32	jjc
Strontium, total	M200.7 ICP	1	0.214			mg/L	0.005	0.03	03/28/14 11:42	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:34	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:42	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/02/14 0:34	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/01/14 20:42	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:32	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/28/14 11:42	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0005	04/02/14 0:34	las
Uranium, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0001	0.0005	04/01/14 20:42	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0176			mg/L	0.0002	0.001	04/02/14 0:34	las
Vanadium, total	M200.8 ICP-MS	1	0.0188			mg/L	0.0002	0.001	04/01/14 20:42	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:32	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/28/14 11:42	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: GW-1

ACZ Sample ID: ***L17362-06***
Date Sampled: *03/18/14 15:20*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	126			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	126		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	11.8		*	mg/L	0.5	2.5	03/26/14 21:05	tcd
Conductivity @25C	SM2510B	1	419			umhos/cm	1	10	03/26/14 18:20	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:29	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:12	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45	B	*	mg/L	0.1	0.5	03/26/14 21:05	tcd
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	1	7	04/11/14 8:15	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.44			mg/L	0.02	0.1	03/28/14 22:57	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 16:12	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	22			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	04/05/14 13:52	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290		*	mg/L	10	20	03/25/14 11:35	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/25/14 12:17	enb
Sulfate	M300.0 - Ion Chromatography	1	34.0			mg/L	0.5	2.5	03/26/14 21:05	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L17362-07***
Date Sampled: *03/18/14 16:30*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:34	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 14:07	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/04/14 13:12	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								03/27/14 12:37	las
Total Hot Plate Digestion	M200.2 ICP								03/27/14 13:22	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L17362-07***
Date Sampled: *03/18/14 16:30*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/25/14 10:42	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	03/28/14 11:51	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/02/14 0:37	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/01/14 20:45	las
Arsenic, dissolved	M200.8 ICP-MS	1	0.0227			mg/L	0.0002	0.001	04/02/14 0:37	las
Arsenic, total	M200.8 ICP-MS	1	0.0219			mg/L	0.0002	0.001	04/01/14 20:45	las
Barium, dissolved	M200.7 ICP	1	0.037		*	mg/L	0.003	0.02	03/25/14 10:42	jjc
Barium, total	M200.7 ICP	1	0.045			mg/L	0.003	0.02	03/28/14 11:51	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:37	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:45	las
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/25/14 10:42	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/28/14 15:45	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	03/25/14 10:42	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/28/14 11:51	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:37	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:45	las
Calcium, dissolved	M200.7 ICP	1	37.4			mg/L	0.1	0.5	03/25/14 10:42	jjc
Calcium, total	M200.7 ICP	1	43.6			mg/L	0.1	0.5	03/28/14 11:51	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	04/02/14 0:37	las
Chromium, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	04/01/14 20:45	las
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	04/02/14 0:37	las
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	04/01/14 20:45	las
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:37	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/01/14 20:45	las
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:42	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:51	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/25/14 10:42	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	03/28/14 11:51	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:37	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:45	las
Lithium, dissolved	M200.7 ICP	1	0.030	B	*	mg/L	0.008	0.04	03/25/14 10:42	jjc
Lithium, total	M200.7 ICP	1	0.037	B		mg/L	0.008	0.04	03/28/14 11:51	jjc
Magnesium, dissolved	M200.7 ICP	1	8.6			mg/L	0.2	1	03/25/14 10:42	jjc
Magnesium, total	M200.7 ICP	1	10.4			mg/L	0.2	1	03/28/14 11:51	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/02/14 0:37	las
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/01/14 20:45	las
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	04/01/14 16:56	las
Mercury, total	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	03/31/14 13:34	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0026	B		mg/L	0.0005	0.003	04/02/14 0:37	las
Molybdenum, total	M200.8 ICP-MS	1	0.0026	B		mg/L	0.0005	0.003	04/01/14 20:45	las
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/02/14 0:37	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/01/14 20:45	las
Potassium, dissolved	M200.7 ICP	1	5.1			mg/L	0.2	1	03/25/14 10:42	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L17362-07***
Date Sampled: *03/18/14 16:30*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	03/28/14 11:51	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/25/14 10:42	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/28/14 11:51	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	04/02/14 0:37	las
Selenium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0003	04/01/14 20:45	las
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/02/14 0:37	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/01/14 20:45	las
Sodium, dissolved	M200.7 ICP	1	21			mg/L	0.2	1	03/25/14 10:42	jjc
Sodium, total	M200.7 ICP	1	24.2			mg/L	0.2	1	03/28/14 11:51	jjc
Strontium, dissolved	M200.7 ICP	1	0.201			mg/L	0.005	0.03	03/25/14 10:42	jjc
Strontium, total	M200.7 ICP	1	0.227			mg/L	0.005	0.03	03/28/14 11:51	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/02/14 0:37	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/01/14 20:45	las
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/02/14 0:37	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/01/14 20:45	las
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/25/14 10:42	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	03/28/14 11:51	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	04/02/14 0:37	las
Uranium, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	04/01/14 20:45	las
Vanadium, dissolved	M200.8 ICP-MS	1	0.0195			mg/L	0.0002	0.001	04/02/14 0:37	las
Vanadium, total	M200.8 ICP-MS	1	0.0207			mg/L	0.0002	0.001	04/01/14 20:45	las
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/25/14 10:42	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	03/28/14 11:51	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L17362-07***
Date Sampled: *03/18/14 16:30*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	128			mg/L	2	20	03/26/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/26/14 0:00	dcw
Total Alkalinity		1	128		*	mg/L	2	20	03/26/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	13.6		*	mg/L	0.5	2.5	03/26/14 21:23	tcd
Conductivity @25C	SM2510B	1	410			umhos/cm	1	10	03/26/14 18:29	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:29	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:13	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.52		*	mg/L	0.1	0.5	03/26/14 21:23	tcd
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	1	7	04/11/14 8:15	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.92			mg/L	0.02	0.1	03/28/14 22:59	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	03/27/14 16:49	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	03/26/14 0:00	dcw
pH measured at		1	22			C	0.1	0.1	03/26/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	04/05/14 13:55	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280		*	mg/L	10	20	03/25/14 11:37	id
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/25/14 12:20	enb
Sulfate	M300.0 - Ion Chromatography	1	27.6			mg/L	0.5	2.5	03/26/14 21:23	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: CYANIDE BLANK

ACZ Sample ID: ***L17362-08***
Date Sampled: *03/18/14 00:00*
Date Received: *03/21/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								03/28/14 16:49	bsu
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 14:13	mpb

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 15:31	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:14	mpb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L17362***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281PBW1	PBW	03/26/14 16:40				U	mg/L		-20	20			
WG361281LCSW3	LCSW	03/26/14 16:59	WC140313-	820.0001		833.3	mg/L	101.6	90	110			
L17364-01DUP1	DUP	03/26/14 18:38			U	U	mg/L				0	20	RA
WG361281LCSW6	LCSW	03/26/14 19:51	WC140313-	820.0001		838.3	mg/L	102.2	90	110			
WG361281PBW2	PBW	03/26/14 20:01				2.5	mg/L		-20	20			
WG361281LCSW9	LCSW	03/26/14 23:25	WC140313-	820.0001		843.4	mg/L	102.9	90	110			
WG361281PBW3	PBW	03/26/14 23:35				2.6	mg/L		-20	20			
WG361281LCSW12	LCSW	03/27/14 2:25	WC140313-	820.0001		834.8	mg/L	101.8	90	110			
WG361281PBW4	PBW	03/27/14 2:35				2.9	mg/L		-20	20			
WG361281LCSW15	LCSW	03/27/14 5:33	WC140313-	820.0001		847.2	mg/L	103.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.968	mg/L	98.4	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.09	0.09			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1.0011		.923	mg/L	92.2	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1.0011	U	.919	mg/L	91.8	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1.0011	U	.919	mg/L	91.8	85	115	0	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	1.0011	U	.904	mg/L	90.3	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1.0011	U	.902	mg/L	90.1	85	115	0.22	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.934	mg/L	96.7	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.09	0.09			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.066	0.066			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1.0011		1.03	mg/L	102.9	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1.0011	U	1.076	mg/L	107.5	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1.0011	U	1.062	mg/L	106.1	70	130	1.31	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1.0011	2.9	8.43	mg/L	552.4	70	130			M1
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1.0011	2.9	8.329	mg/L	542.3	70	130	1.21	20	M1

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.02002		.02129	mg/L	106.3	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0012	0.0012			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.01		.00976	mg/L	97.6	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.01	U	.00996	mg/L	99.6	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.01	U	.01016	mg/L	101.6	70	130	1.99	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.02002		.02006	mg/L	100.2	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0012	0.0012			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00088	0.00088			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.01		.01041	mg/L	104.1	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.01	U	.01026	mg/L	102.6	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.01	U	.01034	mg/L	103.4	70	130	0.78	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05228	mg/L	104.6	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0006	0.0006			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.0501		.04797	mg/L	95.7	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.0501	.0127	.06383	mg/L	102.1	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.0501	.0127	.06308	mg/L	100.6	70	130	1.18	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.05051	mg/L	101	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0006	0.0006			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00044	0.00044			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.0501		.05193	mg/L	103.7	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.0501	.0219	.07178	mg/L	99.6	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.0501	.0219	.07214	mg/L	100.3	70	130	0.5	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.9352	mg/L	96.8	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.009	0.009			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	.5		.4355	mg/L	87.1	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	.5	.04	.4624	mg/L	84.5	85	115			M2
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	.5	.04	.4594	mg/L	83.9	85	115	0.65	20	M2
L17362-06AS	AS	03/25/14 10:36	II140317-2	.5	.025	.4401	mg/L	83	85	115			M2
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	.5	.025	.4394	mg/L	82.9	85	115	0.16	20	M2

SPF Water Engineering

ACZ Project ID: ***L17362***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.9285	mg/L	96.4	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.009	0.009			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.0066	0.0066			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	.5		.49	mg/L	98	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	.5	.021	.5158	mg/L	99	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	.5	.021	.5178	mg/L	99.4	70	130	0.39	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	.5	.057	.5511	mg/L	98.8	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	.5	.057	.5502	mg/L	98.6	70	130	0.16	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05054	mg/L	101.1	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.00015	0.00015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04844	mg/L	96.8	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.05112	mg/L	102.1	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.05182	mg/L	103.5	70	130	1.36	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04926	mg/L	98.5	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.00015	0.00015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00011	0.00011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04999	mg/L	99.9	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	U	.04897	mg/L	97.8	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	U	.04854	mg/L	97	70	130	0.88	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.987	mg/L	99.4	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.12	0.12			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	.999		.889	mg/L	89	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	.999	U	.887	mg/L	88.8	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	.999	U	.88	mg/L	88.1	85	115	0.79	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	.999	U	.871	mg/L	87.2	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	.999	U	.875	mg/L	87.6	85	115	0.46	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361427													
WG361427ICV	ICV	03/28/14 14:42	II140228-1	2		1.96	mg/L	98	95	105			
WG361427ICB	ICB	03/28/14 14:48				U	mg/L		-0.12	0.12			
WG361311LRB	LRB	03/28/14 15:01				U	mg/L		-0.088	0.088			
WG361311LFB	LFB	03/28/14 15:04	II140317-2	.999		.941	mg/L	94.2	85	115			
L17343-01LFM	LFM	03/28/14 15:11	II140317-2	.999	U	.985	mg/L	98.6	70	130			
L17343-01LFMD	LFMD	03/28/14 15:14	II140317-2	.999	U	1.003	mg/L	100.4	70	130	1.81	20	
L17362-03LFM	LFM	03/28/14 15:26	II140317-2	.999	U	.973	mg/L	97.4	70	130			
L17362-03LFMD	LFMD	03/28/14 15:30	II140317-2	.999	U	.987	mg/L	98.8	70	130	1.43	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		2.021	mg/L	101.1	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.03	0.03			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	.5005		.451	mg/L	90.1	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	.5005	.06	.488	mg/L	85.5	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	.5005	.06	.481	mg/L	84.1	85	115	1.44	20	MA
L17362-06AS	AS	03/25/14 10:36	II140317-2	.5005	.06	.493	mg/L	86.5	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	.5005	.06	.487	mg/L	85.3	85	115	1.22	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.962	mg/L	98.1	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.03	0.03			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.022	0.022			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	.5005		.486	mg/L	97.1	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	.5005	16.5	16.98	mg/L	95.9	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	.5005	16.5	17.09	mg/L	117.9	70	130	0.65	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	.5005	.14	.618	mg/L	95.5	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	.5005	.14	.617	mg/L	95.3	70	130	0.16	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04935	mg/L	98.7	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.0501		.04606	mg/L	91.9	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.0501	U	.04847	mg/L	96.7	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.0501	U	.0477	mg/L	95.2	70	130	1.6	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04925	mg/L	98.5	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00022	0.00022			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.0501		.05051	mg/L	100.8	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.0501	U	.04873	mg/L	97.3	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.0501	U	.04872	mg/L	97.2	70	130	0.02	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	100		99.76	mg/L	99.8	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.3	0.3			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	67.98099		64.3	mg/L	94.6	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	67.98099	13.3	76.47	mg/L	92.9	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	67.98099	13.3	76.04	mg/L	92.3	85	115	0.56	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	67.98099	39.6	102.4	mg/L	92.4	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	67.98099	39.6	102.3	mg/L	92.2	85	115	0.1	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	100		99.62	mg/L	99.6	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.3	0.3			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.22	0.22			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	67.98099		72.64	mg/L	106.9	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	67.98099	152	223.7	mg/L	105.5	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	67.98099	152	222.7	mg/L	104	70	130	0.45	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	67.98099	40.5	112.8	mg/L	106.4	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	67.98099	40.5	112.1	mg/L	105.3	70	130	0.62	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361247													
WG361247LFB	LFB	03/26/14 13:20	WI140306-2	30		30.6	mg/L	102	90	110			
L17336-01DUP	DUP	03/26/14 18:06			U	U	mg/L				0	20	RA
L17360-01AS	AS	03/26/14 18:42	WI140306-2	30	2	32.4	mg/L	101.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L17362***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04952	mg/L	99	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0015	0.0015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04636	mg/L	92.6	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.04696	mg/L	93.8	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04624	mg/L	92.4	70	130	1.55	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04924	mg/L	98.5	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0015	0.0015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.0011	0.0011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04881	mg/L	97.5	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	.0011	.04858	mg/L	94.9	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	.0011	.0484	mg/L	94.5	70	130	0.37	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04921	mg/L	98.4	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.00015	0.00015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04763	mg/L	95.2	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	.00025	.04916	mg/L	97.7	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	.00025	.04922	mg/L	97.8	70	130	0.12	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04962	mg/L	99.2	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.00015	0.00015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00011	0.00011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.05056	mg/L	101	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	.00011	.04979	mg/L	99.3	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	.00011	.04889	mg/L	97.5	70	130	1.82	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281LCSW2	LCSW	03/26/14 16:45	PCN43577	1408.8		1456.4	umhos/cm	103.4	90	110			
L17364-01DUP1	DUP	03/26/14 18:38			3550	3570	umhos/cm				0.6	20	
WG361281LCSW5	LCSW	03/26/14 19:37	PCN43577	1408.8		1434.2	umhos/cm	101.8	90	110			
WG361281LCSW8	LCSW	03/26/14 23:11	PCN43577	1408.8		1423.1	umhos/cm	101	90	110			
WG361281LCSW11	LCSW	03/27/14 2:11	PCN43577	1408.8		1409	umhos/cm	100	90	110			
WG361281LCSW14	LCSW	03/27/14 5:19	PCN43577	1408.8		1395.8	umhos/cm	99.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L17362***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04953	mg/L	99.1	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0015	0.0015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04618	mg/L	92.3	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.04572	mg/L	91.3	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04498	mg/L	89.9	70	130	1.63	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04849	mg/L	97	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0015	0.0015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.0011	0.0011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04901	mg/L	97.9	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	U	.0466	mg/L	93.1	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	U	.04667	mg/L	93.2	70	130	0.15	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361515													
WG361515ICV	ICV	03/31/14 15:14	WI140322-7	.3		.2928	mg/L	97.6	90	110			
WG361515ICB	ICB	03/31/14 15:15				U	mg/L		-0.003	0.003			
WG361445LRB	LRB	03/31/14 15:16				U	mg/L		-0.003	0.003			
WG361445LFB	LFB	03/31/14 15:17	WI140322-4	.2		.209	mg/L	104.5	90	110			
L17362-01DUP	DUP	03/31/14 15:22			U	U	mg/L				0	20	RA
L17362-07DUP	DUP	03/31/14 15:30			U	U	mg/L				0	20	RA
L17362-08LFM	LFM	03/31/14 15:32	WI140322-4	.2	U	.1993	mg/L	99.7	90	110			
L17362-02LFM	LFM	03/31/14 15:42	WI140322-4	.2	U	.207	mg/L	103.5	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361346													
WG361346ICV	ICV	03/27/14 11:49	WI140322-7	.3		.2942	mg/L	98.1	90	110			
WG361346ICB	ICB	03/27/14 11:50				U	mg/L		-0.003	0.003			
WG361379													
WG361349LRB	LRB	03/27/14 16:28				U	mg/L		-0.003	0.003			
WG361349LFB	LFB	03/27/14 16:29	WI140322-6	.2		.1925	mg/L	96.3	90	110			
L17332-02LFM	LFM	03/27/14 16:43	WI140322-6	.2	U	.1904	mg/L	95.2	90	110			
L17333-01DUP	DUP	03/27/14 16:44			U	U	mg/L				0	20	RA
WG361515													
WG361515ICV	ICV	03/31/14 15:14	WI140322-7	.3		.2928	mg/L	97.6	90	110			
WG361515ICB	ICB	03/31/14 15:15				U	mg/L		-0.003	0.003			
WG361524													
WG361496LRB	LRB	03/31/14 16:07				U	mg/L		-0.003	0.003			
WG361496LFB	LFB	03/31/14 16:08	WI140322-6	.2		.1924	mg/L	96.2	90	110			
L17362-04DUP	DUP	03/31/14 16:09			U	U	mg/L				0	20	RA
L17362-05LFM	LFM	03/31/14 16:11	WI140322-6	.2	U	.191	mg/L	95.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L17362***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG361247													
WG361247LFB	LFB	03/26/14 13:20	WI140306-2	1.5		1.56	mg/L	104	90	110			
L17336-01DUP	DUP	03/26/14 18:06			U	U	mg/L				0	20	RA
L17360-01AS	AS	03/26/14 18:42	WI140306-2	1.5	.11	1.69	mg/L	105.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.96	mg/L	98	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.3	0.3			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1.001		.91	mg/L	90.9	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1.001	U	.89	mg/L	88.9	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1.001	U	.88	mg/L	87.9	85	115	1.13	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	1.001	U	.91	mg/L	90.9	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1.001	U	.89	mg/L	88.9	85	115	2.22	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.93	mg/L	96.5	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.3	0.3			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.22	0.22			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1.001		1.01	mg/L	100.9	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1.001	U	1.02	mg/L	101.9	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1.001	U	1.05	mg/L	104.9	70	130	2.9	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1.001	U	1.01	mg/L	100.9	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1.001	U	1.01	mg/L	100.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.959	mg/L	98	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.06	0.06			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1.0014		.918	mg/L	91.7	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1.0014	.15	1.038	mg/L	88.7	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1.0014	.15	1.021	mg/L	87	85	115	1.65	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	1.0014	U	.898	mg/L	89.7	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1.0014	U	.89	mg/L	88.9	85	115	0.89	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.941	mg/L	97.1	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.06	0.06			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.044	0.044			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1.0014		1.01	mg/L	100.9	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1.0014	U	1.032	mg/L	103.1	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1.0014	U	1.026	mg/L	102.5	70	130	0.58	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1.0014	3.9	6.059	mg/L	215.6	70	130			M3
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1.0014	3.9	6.056	mg/L	215.3	70	130	0.05	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.0491	mg/L	98.2	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04496	mg/L	89.8	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.04803	mg/L	96	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04775	mg/L	95.4	70	130	0.58	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04943	mg/L	98.9	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00022	0.00022			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04735	mg/L	94.6	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	U	.04766	mg/L	95.2	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	U	.04733	mg/L	94.6	70	130	0.69	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.955	mg/L	97.8	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.024	0.024			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1		.8619	mg/L	86.2	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1	.086	.9264	mg/L	84	85	115			M2
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1	.086	.9239	mg/L	83.8	85	115	0.27	20	M2
L17362-06AS	AS	03/25/14 10:36	II140317-2	1	.04	.8682	mg/L	82.8	85	115			M2
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1	.04	.8642	mg/L	82.4	85	115	0.46	20	M2

SPF Water Engineering

ACZ Project ID: ***L17362***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.9512	mg/L	97.6	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.024	0.024			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.0176	0.0176			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1		.9676	mg/L	96.8	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1	.778	1.771	mg/L	99.3	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1	.778	1.786	mg/L	100.8	70	130	0.84	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1	.543	1.508	mg/L	96.5	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1	.543	1.514	mg/L	97.1	70	130	0.4	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	100		97.8	mg/L	97.8	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.6	0.6			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	50.00131		44.2	mg/L	88.4	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	50.00131	9.3	52.7	mg/L	86.8	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	50.00131	9.3	52.52	mg/L	86.4	85	115	0.34	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	50.00131	7.2	50.15	mg/L	85.9	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	50.00131	7.2	50.05	mg/L	85.7	85	115	0.2	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	100		97.72	mg/L	97.7	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.6	0.6			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.44	0.44			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	50.00131		51.11	mg/L	102.2	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	50.00131	214	266.3	mg/L	104.6	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	50.00131	214	264.9	mg/L	101.8	70	130	0.53	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	50.00131	3.2	54.29	mg/L	102.2	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	50.00131	3.2	53.66	mg/L	100.9	70	130	1.17	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05071	mg/L	101.4	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0015	0.0015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.0501		.04747	mg/L	94.8	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.0501	.0357	.08281	mg/L	94	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.0501	.0357	.08332	mg/L	95	70	130	0.61	20	
WG361642													
WG361642ICV	ICV	04/02/14 16:04	MS140331-9	.05		.05041	mg/L	100.8	90	110			
WG361642ICB	ICB	04/02/14 16:07				U	mg/L		-0.0015	0.0015			
WG361642LFB	LFB	04/02/14 16:11	MS140331-2	.0501		.05146	mg/L	102.7	85	115			
L17317-01AS	AS	04/02/14 16:17	MS140331-2	.0501	.7155	.7782	mg/L	125.1	70	130			
L17317-01ASD	ASD	04/02/14 16:21	MS140331-2	.0501	.7155	.7701	mg/L	109	70	130	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.05143	mg/L	102.9	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0015	0.0015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.0011	0.0011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.0501		.05069	mg/L	101.2	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.0501	U	.0503	mg/L	100.4	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.0501	U	.05048	mg/L	100.8	70	130	0.36	20	
WG361643													
WG361643ICV	ICV	04/02/14 13:17	MS140331-9	.05		.05128	mg/L	102.6	90	110			
WG361643ICB	ICB	04/02/14 13:19				U	mg/L		-0.0015	0.0015			
WG361306LRB	LRB	04/02/14 13:22				U	mg/L		-0.0011	0.0011			
WG361306LFB	LFB	04/02/14 13:24	MS140320-2	.0501		.05106	mg/L	101.9	85	115			
L17362-07LFM	LFM	04/02/14 13:48	MS140320-2	.0501	U	.05175	mg/L	103.3	70	130			
L17362-07LFMD	LFMD	04/02/14 13:50	MS140320-2	.0501	U	.05007	mg/L	99.9	70	130	3.3	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361393													
WG361393ICV	ICV	03/28/14 15:59	HG140325-4	10		9.87	ng/L	98.7	79	121			
WG361393ICB	ICB	03/28/14 16:04				U	ng/L		-0.5	0.5			
WG361562													
WG361562CCV1	CCV	04/01/14 15:50	HG140325-4	10		9.68	ng/L	96.8	76.5	123.4			
WG361562CCB1	CCB	04/01/14 15:55				U	ng/L		-0.5	0.5			
WG361562PQV	PQV	04/01/14 16:00	HG140325-6	.5		.43	ng/L	86	70	130			
WG361562LFB	LFB	04/01/14 16:12	HG140325-5	2		1.5	ng/L	75	71	125			
L17362-01MS	MS	04/01/14 16:26	HG140325-5	2	U	1.52	ng/L	76	71	125			
L17362-01MSD	MSD	04/01/14 16:31	HG140325-5	2	U	1.53	ng/L	76.5	71	125	0.66	24	
WG361562CCV2	CCV	04/01/14 17:01	HG140325-4	10		9.46	ng/L	94.6	76.5	123.4			
WG361562CCB2	CCB	04/01/14 17:06				U	ng/L		-0.5	0.5			
WG361562CCV3	CCV	04/01/14 17:47	HG140325-4	10		9.19	ng/L	91.9	76.5	123.4			
WG361562CCB3	CCB	04/01/14 17:52				U	ng/L		-0.5	0.5			
WG361562CCV4	CCV	04/01/14 18:22	HG140325-4	10		9.71	ng/L	97.1	76.5	123.4			
WG361562CCB4	CCB	04/01/14 18:27				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L17362***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361393													
WG361393ICV	ICV	03/28/14 15:59	HG140325-4	10		9.87	ng/L	98.7	79	121			
WG361393ICB	ICB	03/28/14 16:04				U	ng/L		-0.5	0.5			
WG361470													
WG361470CCV1	CCV	03/31/14 11:35	HG140325-4	10		9.9	ng/L	99	76.5	123.4			
WG361470CCB1	CCB	03/31/14 11:40				U	ng/L		-0.5	0.5			
WG361470PQV	PQV	03/31/14 11:45	HG140325-6	.5		.51	ng/L	102	70	130			
WG361470LFB	LFB	03/31/14 11:50	HG140325-5	2		1.79	ng/L	89.5	71	125			
WG361470CCV2	CCV	03/31/14 12:42	HG140325-4	10		7.72	ng/L	77.2	76.5	123.4			
WG361470CCB2	CCB	03/31/14 12:47				U	ng/L		-0.5	0.5			
L17347-01MS	MS	03/31/14 13:09	HG10XPRE	200	8	25.6	ng/L	88	71	125			
L17347-01MSD	MSD	03/31/14 13:14	HG10XPRE	200	8	25.4	ng/L	87	71	125	0.78	24	
WG361470CCV3	CCV	03/31/14 13:50	HG140325-4	10		10.6	ng/L	106	76.5	123.4			
WG361470CCB3	CCB	03/31/14 13:55				U	ng/L		-0.5	0.5			
WG361470CCV4	CCV	03/31/14 14:35	HG140325-4	10		10.4	ng/L	104	76.5	123.4			
WG361470CCB4	CCB	03/31/14 14:40				U	ng/L		-0.5	0.5			
WG361470CCV5	CCV	03/31/14 15:05	HG140325-4	10		10.6	ng/L	106	76.5	123.4			
WG361470CCB5	CCB	03/31/14 15:11				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.01998		.01889	mg/L	94.5	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0015	0.0015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05		.04464	mg/L	89.3	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05	.0105	.05928	mg/L	97.6	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05	.0105	.05892	mg/L	96.8	70	130	0.61	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.01998		.01865	mg/L	93.3	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0015	0.0015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.0011	0.0011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05		.04756	mg/L	95.1	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05	.0026	.05069	mg/L	96.2	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05	.0026	.05056	mg/L	95.9	70	130	0.26	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04927	mg/L	98.5	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0018	0.0018			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05		.04503	mg/L	90.1	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05	U	.04434	mg/L	88.7	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05	U	.04334	mg/L	86.7	70	130	2.28	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04865	mg/L	97.3	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0018	0.0018			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00132	0.00132			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05		.04766	mg/L	95.3	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05	U	.04576	mg/L	91.5	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05	U	.04635	mg/L	92.7	70	130	1.28	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361453													
WG361453ICV	ICV	03/28/14 20:13	WI140116-3	2.416		2.56	mg/L	106	90	110			
WG361453ICB	ICB	03/28/14 20:14				U	mg/L		-0.06	0.06			
WG361455													
WG361455LFB1	LFB	03/28/14 22:09	WI140215-3	2		2.195	mg/L	109.8	90	110			
WG361455LFB2	LFB	03/28/14 22:43	WI140215-3	2		2.158	mg/L	107.9	90	110			
L17355-01AS	AS	03/28/14 22:45	WI140215-3	2	.26	2.433	mg/L	108.7	90	110			
L17355-02DUP	DUP	03/28/14 22:48			2.19	2.176	mg/L				0.6	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361341													
WG361341ICV	ICV	03/27/14 11:36	WI131021-1	1.003		1.06	mg/L	105.7	90	110			
WG361341ICB	ICB	03/27/14 11:39				U	mg/L		-0.15	0.15			
WG361369													
WG361369LFB1	LFB	03/27/14 15:50	WI140113-8	1		1.061	mg/L	106.1	90	110			
L17248-01AS	AS	03/27/14 15:52	WI140113-8	1	U	1.004	mg/L	100.4	90	110			
L17248-02DUP	DUP	03/27/14 15:54			U	U	mg/L				0	20	RA
L17362-02AS	AS	03/27/14 16:07	WI140113-8	1	U	1.144	mg/L	114.4	90	110			M1
L17362-03DUP	DUP	03/27/14 16:10			U	.058	mg/L				200	20	RA
WG361369LFB2	LFB	03/27/14 16:56	WI140113-8	1		1.075	mg/L	107.5	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281LCSW1	LCSW	03/26/14 16:43	PCN40852	6		5.95	units	99.2					
L17364-01DUP1	DUP	03/26/14 18:38			3.6	3.51	units				2.5	20	
WG361281LCSW4	LCSW	03/26/14 19:35	PCN40852	6		5.97	units	99.5					
WG361281LCSW7	LCSW	03/26/14 23:09	PCN40852	6		5.98	units	99.7					
WG361281LCSW10	LCSW	03/27/14 2:10	PCN40852	6		5.97	units	99.5					
WG361281LCSW13	LCSW	03/27/14 5:17	PCN40852	6		5.96	units	99.3					

SPF Water Engineering

ACZ Project ID: ***L17362***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361833													
WG361833ICV	ICV	04/05/14 13:38	WI140401-5	.65228		.636	mg/L	97.5	90	110			
WG361833ICB	ICB	04/05/14 13:41				U	mg/L		-0.03	0.03			
WG361801LRB	LRB	04/05/14 13:42				U	mg/L		-0.03	0.03			
WG361801LFB	LFB	04/05/14 13:43	WI140326-3	.5		.501	mg/L	100.2	90	110			
L17248-01LFM	LFM	04/05/14 13:45	5XPT	2.5	.4	2.961	mg/L	102.4	90	110			
L17362-01DUP	DUP	04/05/14 13:47			.05	.049	mg/L				2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	20		19.85	mg/L	99.3	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.6	0.6			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	99.99364		90.65	mg/L	90.7	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	99.99364	7.4	96.6	mg/L	89.2	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	99.99364	7.4	96.91	mg/L	89.5	85	115	0.32	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	99.99364	5.2	94.07	mg/L	88.9	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	99.99364	5.2	94.15	mg/L	89	85	115	0.09	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	20		19.55	mg/L	97.8	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.6	0.6			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.44	0.44			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	99.99364		101.8	mg/L	101.8	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	99.99364	29.2	134.4	mg/L	105.2	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	99.99364	29.2	135.2	mg/L	106	70	130	0.59	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	99.99364	10.1	111.9	mg/L	101.8	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	99.99364	10.1	111.6	mg/L	101.5	70	130	0.27	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361151													
WG361151PBW	PBW	03/25/14 11:00				U	mg/L		-20	20			
WG361151LCSW	LCSW	03/25/14 11:01	PCN45341	260		246	mg/L	94.6	80	120			
L17322-05DUP	DUP	03/25/14 11:25			2220	2198	mg/L				1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361160													
WG361160PBW	PBW	03/25/14 11:41				U	mg/L		-15	15			
WG361160LCSW	LCSW	03/25/14 11:43	PCN45341	160		135	mg/L	84.4	80	120			
L17362-01DUP	DUP	03/25/14 12:08			190	188	mg/L				1.1	10	RA
L17385-04DUP	DUP	03/25/14 12:31			30	32	mg/L				6.5	10	RA

SPF Water Engineering

ACZ Project ID: ***L17362***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.97	mg/L	98.5	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.3	0.3			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1.0009		.91	mg/L	90.9	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1.0009	U	.89	mg/L	88.9	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1.0009	U	.88	mg/L	87.9	85	115	1.13	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	1.0009	U	.86	mg/L	85.9	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1.0009	U	.86	mg/L	85.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.97	mg/L	98.5	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.3	0.3			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.22	0.22			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1.0009		1.06	mg/L	105.9	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1.0009	U	1.08	mg/L	107.9	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1.0009	U	1.08	mg/L	107.9	70	130	0	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1.0009	U	1.06	mg/L	105.9	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1.0009	U	1.06	mg/L	105.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05063	mg/L	101.3	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04542	mg/L	90.7	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.0497	mg/L	99.3	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04904	mg/L	98	70	130	1.34	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.0509	mg/L	101.8	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				.00017	mg/L		-0.00022	0.00022			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.05051	mg/L	100.9	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	.0014	.0499	mg/L	96.9	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	.0014	.04932	mg/L	95.7	70	130	1.17	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.02002		.01974	mg/L	98.6	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.00015	0.00015			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.01002		.009625	mg/L	96.1	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.01002	U	.01005	mg/L	100.3	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.01002	U	.009936	mg/L	99.2	70	130	1.14	20	

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ACZ Project ID: ***L17362***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.02002		.01935	mg/L	96.7	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.00015	0.00015			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00011	0.00011			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.01001		.009905	mg/L	99	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.01001	U	.009616	mg/L	96.1	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.01001	U	.009576	mg/L	95.7	70	130	0.42	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	100		99.9	mg/L	99.9	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.6	0.6			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	100.0393		91.31	mg/L	91.3	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	100.0393	86	174.4	mg/L	88.4	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	100.0393	86	173	mg/L	87	85	115	0.81	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	100.0393	23.3	112.5	mg/L	89.2	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	100.0393	23.3	112.3	mg/L	89	85	115	0.18	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	100		98.78	mg/L	98.8	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.6	0.6			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.44	0.44			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	100.0393		100.8	mg/L	100.8	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	100.0393	578	674.4	mg/L	96.4	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	100.0393	578	680.4	mg/L	102.4	70	130	0.89	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	100.0393	138	239.8	mg/L	101.8	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	100.0393	138	237.5	mg/L	99.5	70	130	0.96	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.993	mg/L	99.7	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.015	0.015			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	.5		.456	mg/L	91.2	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	.5	.337	.7729	mg/L	87.2	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	.5	.337	.7719	mg/L	87	85	115	0.13	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	.5	.188	.6326	mg/L	88.9	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	.5	.188	.6328	mg/L	89	85	115	0.03	20	

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ACZ Project ID: ***L17362***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.9792	mg/L	99	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.015	0.015			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.011	0.011			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	.5		.4978	mg/L	99.6	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	.5	1.96	2.449	mg/L	97.8	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	.5	1.96	2.461	mg/L	100.2	70	130	0.49	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	.5	.139	.6386	mg/L	99.9	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	.5	.139	.6376	mg/L	99.7	70	130	0.16	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361247													
WG361247LFB	LFB	03/26/14 13:20	WI140306-2	30		30.6	mg/L	102	90	110			
L17336-01DUP	DUP	03/26/14 18:06			299	299	mg/L				0	20	
L17360-01AS	AS	03/26/14 18:42	WI140306-2	30	14.3	44.3	mg/L	100	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05296	mg/L	105.9	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.0502		.04772	mg/L	95.1	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.0502	U	.05191	mg/L	103.4	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.0502	U	.05071	mg/L	101	70	130	2.34	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.05366	mg/L	107.3	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00022	0.00022			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.0502		.05042	mg/L	100.4	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.0502	U	.05111	mg/L	101.8	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.0502	U	.05091	mg/L	101.4	70	130	0.39	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.0501		.04951	mg/L	98.8	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04518	mg/L	90.3	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.04808	mg/L	96.1	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04783	mg/L	95.6	70	130	0.52	20	

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ACZ Project ID: ***L17362***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.0501		.04927	mg/L	98.3	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				.00034	mg/L		-0.00022	0.00022			BF
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04907	mg/L	98	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	U	.0493	mg/L	98.5	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	U	.04923	mg/L	98.4	70	130	0.14	20	
WG362051													
WG362051ICV	ICV	04/09/14 19:17	MS140331-9	.0501		.05122	mg/L	102.2	90	110			
WG362051ICB	ICB	04/09/14 19:21				U	mg/L		-0.0003	0.0003			
WG361782LRB	LRB	04/09/14 19:24				U	mg/L		-0.00022	0.00022			
WG361782LFB	LFB	04/09/14 19:27	MS140331-2	.05005		.05231	mg/L	104.5	85	115			
L17464-02LFM	LFM	04/09/14 20:08	MS140331-2	.05005	U	.05382	mg/L	107.5	70	130			
L17464-02LFMD	LFMD	04/09/14 20:12	MS140331-2	.05005	U	.05295	mg/L	105.8	70	130	1.63	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.9255	mg/L	96.3	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.015	0.015			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	1		.8857	mg/L	88.6	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	1	U	.8822	mg/L	88.2	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	1	U	.8734	mg/L	87.3	85	115	1	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	1	U	.8762	mg/L	87.6	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	1	U	.8746	mg/L	87.5	85	115	0.18	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.939	mg/L	97	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.015	0.015			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.011	0.011			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	1		1.006	mg/L	100.6	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	1	.006	1.018	mg/L	101.2	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	1	.006	1.017	mg/L	101.1	70	130	0.1	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	1	.112	1.182	mg/L	107	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	1	.112	1.182	mg/L	107	70	130	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.05141	mg/L	102.8	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0003	0.0003			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05		.04901	mg/L	98	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05	U	.05409	mg/L	108.2	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05	U	.05401	mg/L	108	70	130	0.15	20	

SPF Water Engineering

ACZ Project ID: ***L17362***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.05266	mg/L	105.3	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0003	0.0003			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00022	0.00022			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05		.05191	mg/L	103.8	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05	.0029	.0567	mg/L	107.6	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05	.0029	.05665	mg/L	107.5	70	130	0.09	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361610													
WG361610ICV	ICV	04/02/14 0:03	MS140331-9	.05		.04874	mg/L	97.5	90	110			
WG361610ICB	ICB	04/02/14 0:07				U	mg/L		-0.0006	0.0006			
WG361610LFB	LFB	04/02/14 0:10	MS140331-2	.05005		.04691	mg/L	93.7	85	115			
L17362-01AS	AS	04/02/14 0:17	MS140331-2	.05005	U	.04919	mg/L	98.3	70	130			
L17362-01ASD	ASD	04/02/14 0:20	MS140331-2	.05005	U	.04855	mg/L	97	70	130	1.31	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361587													
WG361587ICV	ICV	04/01/14 19:17	MS140331-9	.05		.04919	mg/L	98.4	90	110			
WG361587ICB	ICB	04/01/14 19:20				U	mg/L		-0.0006	0.0006			
WG361306LRB	LRB	04/01/14 19:24				U	mg/L		-0.00044	0.00044			
WG361306LFB	LFB	04/01/14 19:27	MS140320-2	.05005		.04985	mg/L	99.6	85	115			
L17362-07LFM	LFM	04/01/14 20:49	MS140320-2	.05005	.0207	.07059	mg/L	99.7	70	130			
L17362-07LFMD	LFMD	04/01/14 20:52	MS140320-2	.05005	.0207	.06994	mg/L	98.4	70	130	0.93	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361133													
WG361133ICV	ICV	03/25/14 9:27	II140220-1	2		1.935	mg/L	96.8	95	105			
WG361133ICB	ICB	03/25/14 9:33				U	mg/L		-0.03	0.03			
WG361133LFB	LFB	03/25/14 9:46	II140317-2	.5005		.443	mg/L	88.5	85	115			
L17312-02AS	AS	03/25/14 9:55	II140317-2	.5005	U	.437	mg/L	87.3	85	115			
L17312-02ASD	ASD	03/25/14 9:58	II140317-2	.5005	U	.437	mg/L	87.3	85	115	0	20	
L17362-06AS	AS	03/25/14 10:36	II140317-2	.5005	U	.427	mg/L	85.3	85	115			
L17362-06ASD	ASD	03/25/14 10:39	II140317-2	.5005	U	.425	mg/L	84.9	85	115	0.47	20	

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ACZ Project ID: ***L17362***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361367													
WG361367ICV	ICV	03/28/14 10:16	II140228-1	2		1.955	mg/L	97.8	95	105			
WG361367ICB	ICB	03/28/14 10:22				U	mg/L		-0.03	0.03			
WG361311LRB	LRB	03/28/14 10:35				U	mg/L		-0.022	0.022			
WG361311LFB	LFB	03/28/14 10:38	II140317-2	.5005		.516	mg/L	103.1	85	115			
L17343-01LFM	LFM	03/28/14 10:57	II140317-2	.5005	U	.527	mg/L	105.3	70	130			
L17343-01LFMD	LFMD	03/28/14 11:00	II140317-2	.5005	U	.525	mg/L	104.9	70	130	0.38	20	
L17362-03LFM	LFM	03/28/14 11:32	II140317-2	.5005	.02	.532	mg/L	102.3	70	130			
L17362-03LFMD	LFMD	03/28/14 11:35	II140317-2	.5005	.02	.529	mg/L	101.7	70	130	0.57	20	

SPF Water Engineering ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-01	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Boron, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361379	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-02	WG361367	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Boron, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG361367	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361587	Tin, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361379	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-03	WG361782	Total Hot Plate Digestion	M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.
	WG361367	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Boron, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG361367	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361379	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17362-04	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-05	WG361367	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Boron, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG361367	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361587	Tin, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-06	WG361367	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361367	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361587	Tin, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L17362***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17362-07	WG361367	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Barium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361367	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361133	Lithium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361587	Tin, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG361247	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361247	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361369	Nitrogen, ammonia	M350.1 - Automated Phenate	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361833	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361151	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361160	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361281	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17362-08	WG361515	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 1st Quarter 2014 Sampling

ACZ Project ID: L17362
Date Received: 03/21/2014 08:44
Received By: mtb
Date Printed: 3/21/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19328	0.5	16	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L17362

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 1st Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ spec						
PW-4	3/18/14 10:50	GW	8	X							
GW-4	3/18/14 11:40	GW	8	X							
59766	3/18/14 12:40	GW	8	X							
Cyanide Blank	NA	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	3-20-14 11:00	[signature]	3-21-14 0940

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L17362 Chain of Custody

(1)

L17362

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 1st Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	per ACZ spec						
PW-1	3/18/14 14:45	GW	8	X							
GW-1	3/18/14 15:20	GW	8	X							
59761	3/18/14 16:30	GW	8	X							
40 cyanide blank	NA	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3-20-14 11:00	MC	3-21-14 0844

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

(2)

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

CONTRACT DETAILS

Pricing includes shipment of all standard sample containers and related paperwork by UPS Ground Service. Please allow three to five days for delivery when ordering containers. ACZ must be notified prior to receiving samples of all special requests such as electronic data deliverables or special reporting reqirements. The client will be charged for special sample containers or express shipping and additional charges may apply for non-standard requests.

This quotation is valid for six months from the bid date unless specified otherwise in the bid. All bids must be signed and returned to ACZ before the project(s) is received. The authorized signature represents acceptance of the pricing as well as the general terms and conditions of ACZ Laboratories, Inc. which may be downloaded from our web site at http://www.acz.com/PDF/termsconditions.pdf. Please note that MDL's in this quote may possibly increase due to sample matrix or samples with high TDS.

All orders that require shipping of coolers are subject to a minimum charge of $200.00. Local orders without shipping are subject to a minimum charge of $125.00. Samples may incur a $11.00/sample disposal fee for any samples deemed to be hazardous.

ACZ Representative (Authorized signature and date) _____

Client Representative (Authorized signature and date) _____

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 14, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 1st Quarter 2014 Sampli
ACZ Project ID: L17433

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 26, 2014. This project has been assigned to ACZ's project number, L17433. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L17433. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 14, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

April 14, 2014

Project ID: Calico 1st Quarter 2014 Sampli
ACZ Project ID: L17433

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 9 ground water samples from SPF Water Engineering on March 26, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L17433. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L17433. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L17433-01***
Date Sampled: *03/24/14 11:05*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:31	tcd
Cyanide, WAD	SM4500-CN I- distillation								03/31/14 15:23	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 15:30	bsu
Total Hot Plate Digestion	M200.2 ICP								03/31/14 11:54	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 11:13	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L17433-01***
Date Sampled: *03/24/14 11:05*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 16:41	aeb
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	04/01/14 10:30	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	04/07/14 15:43	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	04/03/14 22:07	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0372			mg/L	0.0002	0.001	04/07/14 15:43	msh
Arsenic, total	M200.8 ICP-MS	1	0.0348			mg/L	0.0002	0.001	04/03/14 22:07	msh
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	03/27/14 16:41	aeb
Barium, total	M200.7 ICP	1	0.030			mg/L	0.003	0.02	04/01/14 16:20	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:33	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:07	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 16:41	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:30	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	03/27/14 16:41	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	04/01/14 10:30	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:33	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:07	msh
Calcium, dissolved	M200.7 ICP	1	37.9			mg/L	0.1	0.5	03/27/14 16:41	aeb
Calcium, total	M200.7 ICP	1	37.6			mg/L	0.1	0.5	04/01/14 10:30	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/07/14 15:43	msh
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	04/03/14 22:07	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	04/07/14 15:43	msh
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	04/03/14 22:07	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:43	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/03/14 22:07	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:41	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:30	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/27/14 16:41	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	04/01/14 10:30	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:43	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:07	msh
Lithium, dissolved	M200.7 ICP	1	0.038	B		mg/L	0.008	0.04	03/27/14 16:41	aeb
Lithium, total	M200.7 ICP	1	0.046			mg/L	0.008	0.04	04/01/14 10:30	jjc
Magnesium, dissolved	M200.7 ICP	1	6.8			mg/L	0.2	1	03/27/14 16:41	aeb
Magnesium, total	M200.7 ICP	1	6.8			mg/L	0.2	1	04/01/14 10:30	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:43	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/03/14 22:07	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/01/14 17:26	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/03/14 10:17	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0005	0.003	04/07/14 15:43	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	04/03/14 22:07	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/07/14 15:43	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/03/14 22:07	msh
Potassium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	03/27/14 16:41	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L17433-01***
Date Sampled: *03/24/14 11:05*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	04/01/14 10:30	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:41	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:30	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0003	04/09/14 4:33	pmc
Selenium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0003	04/03/14 22:07	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 15:43	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:07	msh
Sodium, dissolved	M200.7 ICP	1	25.3			mg/L	0.2	1	03/27/14 16:41	aeb
Sodium, total	M200.7 ICP	1	25.4			mg/L	0.2	1	04/01/14 10:30	jjc
Strontium, dissolved	M200.7 ICP	1	0.196			mg/L	0.005	0.03	03/27/14 16:41	aeb
Strontium, total	M200.7 ICP	1	0.202			mg/L	0.005	0.03	04/01/14 10:30	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:43	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:07	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 15:43	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/03/14 22:07	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 16:41	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	04/01/14 10:30	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0005	04/07/14 15:43	msh
Uranium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	04/03/14 22:07	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0168			mg/L	0.0002	0.001	04/07/14 15:43	msh
Vanadium, total	M200.8 ICP-MS	1	0.0181			mg/L	0.0002	0.001	04/03/14 22:07	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/27/14 16:41	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	04/01/14 10:30	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L17433-01***
Date Sampled: *03/24/14 11:05*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	102			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	102			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	10.5		*	mg/L	0.5	2.5	04/03/14 19:30	tcd
Conductivity @25C	SM2510B	1	351			umhos/cm	1	10	03/27/14 4:20	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:53	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	03/31/14 16:28	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45	B	*	mg/L	0.1	0.5	04/03/14 19:30	tcd
Hardness as CaCO3	SM2340B - Calculation		123			mg/L	1	7	04/14/14 8:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.28		*	mg/L	0.02	0.1	04/05/14 14:54	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	04/02/14 12:50	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	23			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	04/02/14 23:49	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	03/28/14 14:52	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/28/14 15:15	dcw
Sulfate	M300.0 - Ion Chromatography	1	36.6		*	mg/L	0.5	2.5	04/03/14 19:30	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L17433-02***
Date Sampled: *03/24/14 12:35*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:31	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/02/14 9:46	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 15:39	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 11:23	las
Total Hot Plate Digestion	M200.2 ICP								03/31/14 12:05	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L17433-02***
Date Sampled: *03/24/14 12:35*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 16:56	aeb
Aluminum, total	M200.7 ICP	1	0.59		*	mg/L	0.03	0.2	04/01/14 10:33	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	04/07/14 15:46	msh
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	04/03/14 22:10	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0282			mg/L	0.0002	0.001	04/07/14 15:46	msh
Arsenic, total	M200.8 ICP-MS	1	0.0245			mg/L	0.0002	0.001	04/03/14 22:10	msh
Barium, dissolved	M200.7 ICP	1	0.046			mg/L	0.003	0.02	03/27/14 16:56	aeb
Barium, total	M200.7 ICP	1	0.055			mg/L	0.003	0.02	04/01/14 16:23	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:36	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:10	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 16:56	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:33	jjc
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	03/27/14 16:56	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	04/01/14 10:33	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:36	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:10	msh
Calcium, dissolved	M200.7 ICP	1	38.8			mg/L	0.1	0.5	03/27/14 16:56	aeb
Calcium, total	M200.7 ICP	1	39			mg/L	0.1	0.5	04/01/14 10:33	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/07/14 15:46	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	04/03/14 22:10	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	04/07/14 15:46	msh
Cobalt, total	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	04/03/14 22:10	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0062			mg/L	0.0005	0.003	04/07/14 15:46	msh
Copper, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0005	0.003	04/03/14 22:10	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:56	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:33	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/27/14 16:56	aeb
Iron, total	M200.7 ICP	1	0.20			mg/L	0.02	0.05	04/01/14 10:33	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:46	msh
Lead, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	04/03/14 22:10	msh
Lithium, dissolved	M200.7 ICP	1	0.047			mg/L	0.008	0.04	03/27/14 16:56	aeb
Lithium, total	M200.7 ICP	1	0.055			mg/L	0.008	0.04	04/01/14 10:33	jjc
Magnesium, dissolved	M200.7 ICP	1	6.5			mg/L	0.2	1	03/27/14 16:56	aeb
Magnesium, total	M200.7 ICP	1	6.6			mg/L	0.2	1	04/01/14 10:33	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:46	msh
Manganese, total	M200.8 ICP-MS	1	0.0061			mg/L	0.0005	0.003	04/03/14 22:10	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/01/14 17:32	las
Mercury, total	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	04/03/14 10:32	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	04/07/14 15:46	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	04/03/14 22:10	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/07/14 15:46	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/03/14 22:10	msh
Potassium, dissolved	M200.7 ICP	1	7.2			mg/L	0.2	1	03/27/14 16:56	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L17433-02***
Date Sampled: *03/24/14 12:35*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.3			mg/L	0.2	1	04/01/14 10:33	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:56	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:33	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	04/09/14 4:36	pmc
Selenium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	04/03/14 22:10	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 15:46	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:10	msh
Sodium, dissolved	M200.7 ICP	1	25.8			mg/L	0.2	1	03/27/14 16:56	aeb
Sodium, total	M200.7 ICP	1	25.7			mg/L	0.2	1	04/01/14 10:33	jjc
Strontium, dissolved	M200.7 ICP	1	0.243			mg/L	0.005	0.03	03/27/14 16:56	aeb
Strontium, total	M200.7 ICP	1	0.250			mg/L	0.005	0.03	04/01/14 10:33	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:46	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:10	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 15:46	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/03/14 22:10	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 16:56	aeb
Titanium, total	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	04/01/14 10:33	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	04/07/14 15:46	msh
Uranium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	04/03/14 22:10	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0157			mg/L	0.0002	0.001	04/07/14 15:46	msh
Vanadium, total	M200.8 ICP-MS	1	0.0155			mg/L	0.0002	0.001	04/03/14 22:10	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/27/14 16:56	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	04/01/14 10:33	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L17433-02***
Date Sampled: *03/24/14 12:35*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	132			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	132			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	9.57		*	mg/L	0.5	2.5	04/03/14 20:24	tcd
Conductivity @25C	SM2510B	1	380			umhos/cm	1	10	03/27/14 4:31	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:54	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 14:59	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.50		*	mg/L	0.1	0.5	04/03/14 20:24	tcd
Hardness as CaCO3	SM2340B - Calculation		124			mg/L	1	7	04/14/14 8:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.78		*	mg/L	0.02	0.1	04/05/14 14:17	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	04/02/14 12:55	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	24			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	04/02/14 23:50	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	03/28/14 14:55	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	22		*	mg/L	5	20	03/28/14 15:18	dcw
Sulfate	M300.0 - Ion Chromatography	1	30.4		*	mg/L	0.5	2.5	04/03/14 20:24	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760-DUP

ACZ Sample ID: ***L17433-03***
Date Sampled: *03/24/14 12:40*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:31	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/02/14 10:03	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 15:48	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 11:32	las
Total Hot Plate Digestion	M200.2 ICP								03/31/14 12:17	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760-DUP

ACZ Sample ID: ***L17433-03***
Date Sampled: *03/24/14 12:40*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 16:59	aeb
Aluminum, total	M200.7 ICP	1	0.37		*	mg/L	0.03	0.2	04/01/14 10:37	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	04/07/14 15:50	msh
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	04/03/14 22:14	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0221			mg/L	0.0002	0.001	04/07/14 15:50	msh
Arsenic, total	M200.8 ICP-MS	1	0.0251			mg/L	0.0002	0.001	04/03/14 22:14	msh
Barium, dissolved	M200.7 ICP	1	0.048			mg/L	0.003	0.02	03/27/14 16:59	aeb
Barium, total	M200.7 ICP	1	0.056			mg/L	0.003	0.02	04/01/14 16:26	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:39	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:14	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 16:59	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:37	jjc
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	03/27/14 16:59	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	04/01/14 10:37	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:39	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:14	msh
Calcium, dissolved	M200.7 ICP	1	38.4			mg/L	0.1	0.5	03/27/14 16:59	aeb
Calcium, total	M200.7 ICP	1	38.5			mg/L	0.1	0.5	04/01/14 10:37	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	04/07/14 15:50	msh
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	04/03/14 22:14	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	04/07/14 15:50	msh
Cobalt, total	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	04/03/14 22:14	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	04/07/14 15:50	msh
Copper, total	M200.8 ICP-MS	1	0.0080			mg/L	0.0005	0.003	04/03/14 22:14	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:59	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:37	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/27/14 16:59	aeb
Iron, total	M200.7 ICP	1	0.12			mg/L	0.02	0.05	04/01/14 10:37	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:50	msh
Lead, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	04/03/14 22:14	msh
Lithium, dissolved	M200.7 ICP	1	0.046			mg/L	0.008	0.04	03/27/14 16:59	aeb
Lithium, total	M200.7 ICP	1	0.055			mg/L	0.008	0.04	04/01/14 10:37	jjc
Magnesium, dissolved	M200.7 ICP	1	6.4			mg/L	0.2	1	03/27/14 16:59	aeb
Magnesium, total	M200.7 ICP	1	6.5			mg/L	0.2	1	04/01/14 10:37	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:50	msh
Manganese, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.003	04/03/14 22:14	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U	*	ng/L	0.2	0.5	04/01/14 17:37	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	04/03/14 10:37	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	04/07/14 15:50	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	04/03/14 22:14	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/07/14 15:50	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/03/14 22:14	msh
Potassium, dissolved	M200.7 ICP	1	7.1			mg/L	0.2	1	03/27/14 16:59	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760-DUP

ACZ Sample ID: ***L17433-03***
Date Sampled: *03/24/14 12:40*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.2			mg/L	0.2	1	04/01/14 10:37	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 16:59	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:37	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	04/09/14 4:39	pmc
Selenium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	04/03/14 22:14	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 15:50	msh
Silver, total	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	04/03/14 22:14	msh
Sodium, dissolved	M200.7 ICP	1	25.3			mg/L	0.2	1	03/27/14 16:59	aeb
Sodium, total	M200.7 ICP	1	25.6			mg/L	0.2	1	04/01/14 10:37	jjc
Strontium, dissolved	M200.7 ICP	1	0.246			mg/L	0.005	0.03	03/27/14 16:59	aeb
Strontium, total	M200.7 ICP	1	0.253			mg/L	0.005	0.03	04/01/14 10:37	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:50	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:14	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 15:50	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	04/03/14 22:14	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 16:59	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	04/01/14 10:37	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	04/07/14 15:50	msh
Uranium, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	04/03/14 22:14	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0115			mg/L	0.0002	0.001	04/07/14 15:50	msh
Vanadium, total	M200.8 ICP-MS	1	0.0156			mg/L	0.0002	0.001	04/03/14 22:14	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/27/14 16:59	aeb
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	04/01/14 10:37	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59760-DUP

ACZ Sample ID: ***L17433-03***
Date Sampled: *03/24/14 12:40*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	116			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	116			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	9.13		*	mg/L	0.5	2.5	04/03/14 20:42	tcd
Conductivity @25C	SM2510B	1	371			umhos/cm	1	10	03/27/14 4:40	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:54	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 15:01	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.48	B	*	mg/L	0.1	0.5	04/03/14 20:42	tcd
Hardness as CaCO3	SM2340B - Calculation		122			mg/L	1	7	04/14/14 8:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.83		*	mg/L	0.02	0.1	04/05/14 14:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	04/02/14 12:56	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	24			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	04/02/14 23:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270		*	mg/L	10	20	03/28/14 15:02	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	13	B	*	mg/L	5	20	03/28/14 15:20	dcw
Sulfate	M300.0 - Ion Chromatography	1	29.6		*	mg/L	0.5	2.5	04/03/14 20:42	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: CYANIDE BLANK

ACZ Sample ID: ***L17433-04***
Date Sampled: *03/24/14 00:00*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:31	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/02/14 10:20	mss2

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:55	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 15:02	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: DEPOSIT RE-SAMPLE

ACZ Sample ID: ***L17433-05***
Date Sampled: *03/16/14 12:35*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B	*	ng/L	0.2	0.5	04/01/14 17:42	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	04/03/14 10:42	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L17433-06***
Date Sampled: *03/24/14 13:45*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/04/14 11:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 15:57	bsu
Total Hot Plate Digestion	M200.2 ICP								03/31/14 12:52	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 11:42	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L17433-06***
Date Sampled: *03/24/14 13:45*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 17:03	aeb
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	04/01/14 10:46	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	04/07/14 15:53	msh
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	04/03/14 22:24	msh
Arsenic, dissolved	M200.8 ICP-MS	40	3.630			mg/L	0.008	0.04	04/10/14 6:25	pmc
Arsenic, total	M200.8 ICP-MS	40	3.750			mg/L	0.008	0.04	04/09/14 22:09	pmc
Barium, dissolved	M200.7 ICP	1	0.062			mg/L	0.003	0.02	03/27/14 17:03	aeb
Barium, total	M200.7 ICP	1	0.067			mg/L	0.003	0.02	04/01/14 16:36	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:42	pmc
Beryllium, total	M200.8 ICP-MS	40		U		mg/L	0.002	0.01	04/09/14 22:09	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 17:03	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:46	jjc
Boron, dissolved	M200.7 ICP	1	0.61			mg/L	0.01	0.05	03/27/14 17:03	aeb
Boron, total	M200.7 ICP	1	0.60			mg/L	0.01	0.05	04/01/14 10:46	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:42	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:24	msh
Calcium, dissolved	M200.7 ICP	1	157			mg/L	0.1	0.5	03/27/14 17:03	aeb
Calcium, total	M200.7 ICP	1	150			mg/L	0.1	0.5	04/01/14 10:46	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/07/14 15:53	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/03/14 22:24	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.08330			mg/L	0.00005	0.0003	04/07/14 15:53	msh
Cobalt, total	M200.8 ICP-MS	1	0.08309			mg/L	0.00005	0.0003	04/03/14 22:24	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:53	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/03/14 22:24	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:03	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:46	jjc
Iron, dissolved	M200.7 ICP	1	163			mg/L	0.02	0.05	03/27/14 17:03	aeb
Iron, total	M200.7 ICP	1	156			mg/L	0.02	0.05	04/01/14 10:46	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:53	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:24	msh
Lithium, dissolved	M200.7 ICP	1	0.709			mg/L	0.008	0.04	03/27/14 17:03	aeb
Lithium, total	M200.7 ICP	1	0.700			mg/L	0.008	0.04	04/01/14 10:46	jjc
Magnesium, dissolved	M200.7 ICP	1	8.2			mg/L	0.2	1	03/27/14 17:03	aeb
Magnesium, total	M200.7 ICP	1	7.9			mg/L	0.2	1	04/01/14 10:46	jjc
Manganese, dissolved	M200.8 ICP-MS	40	1.31			mg/L	0.02	0.1	04/10/14 6:25	pmc
Manganese, total	M200.8 ICP-MS	40	1.34			mg/L	0.02	0.1	04/09/14 22:09	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5		*	ng/L	0.2	0.5	04/01/14 17:57	las
Mercury, total	M1631, Atomic Fluorescence	5	4			ng/L	1	3	04/03/14 10:59	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.003	04/07/14 15:53	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	04/03/14 22:24	msh
Nickel, dissolved	M200.8 ICP-MS	1	0.0844			mg/L	0.0006	0.003	04/07/14 15:53	msh
Nickel, total	M200.8 ICP-MS	1	0.0831			mg/L	0.0006	0.003	04/03/14 22:24	msh
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.2	1	03/27/14 17:03	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L17433-06***
Date Sampled: *03/24/14 13:45*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	04/01/14 10:46	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:03	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:46	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	04/09/14 4:42	pmc
Selenium, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0003	04/03/14 22:24	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 15:53	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:24	msh
Sodium, dissolved	M200.7 ICP	1	275			mg/L	0.2	1	03/27/14 17:03	aeb
Sodium, total	M200.7 ICP	1	271			mg/L	0.2	1	04/01/14 10:46	jjc
Strontium, dissolved	M200.7 ICP	1	3.610			mg/L	0.005	0.03	03/27/14 17:03	aeb
Strontium, total	M200.7 ICP	1	3.420			mg/L	0.005	0.03	04/01/14 10:46	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:53	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:24	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 15:53	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/03/14 22:24	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 17:03	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	04/01/14 10:46	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	04/07/14 15:53	msh
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	04/03/14 22:24	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	04/07/14 15:53	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	04/03/14 22:24	msh
Zinc, dissolved	M200.7 ICP	1	0.60			mg/L	0.01	0.05	03/27/14 17:03	aeb
Zinc, total	M200.7 ICP	1	0.58			mg/L	0.01	0.05	04/01/14 10:46	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L17433-06***
Date Sampled: *03/24/14 13:45*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	28			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	28			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	22.5		*	mg/L	0.5	2.5	04/03/14 20:59	tcd
Conductivity @25C	SM2510B	1	2100			umhos/cm	1	10	03/27/14 4:47	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:58	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/04/14 15:42	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.83		*	mg/L	0.1	0.5	04/03/14 20:59	tcd
Hardness as CaCO3	SM2340B - Calculation		426			mg/L	1	7	04/14/14 8:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	04/05/14 14:21	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.72		*	mg/L	0.05	0.5	04/02/14 13:04	tcd
pH (lab)	SM4500H+ B									
pH		1	6.6	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	23			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.35		*	mg/L	0.01	0.05	04/02/14 23:52	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1640		*	mg/L	10	20	03/28/14 15:05	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1	116		*	mg/L	5	20	03/28/14 15:23	dcw
Sulfate	M300.0 - Ion Chromatography	20	1070		*	mg/L	10	50	04/04/14 11:36	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59763

ACZ Sample ID: ***L17433-07***
Date Sampled: *03/24/14 15:15*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/02/14 10:37	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 16:06	bsu
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 11:52	las
Total Hot Plate Digestion	M200.2 ICP								03/31/14 13:03	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59763

ACZ Sample ID: ***L17433-07***
Date Sampled: *03/24/14 15:15*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 17:06	aeb
Aluminum, total	M200.7 ICP	1	0.12	B	*	mg/L	0.03	0.2	04/01/14 10:49	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	04/07/14 15:57	msh
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	04/03/14 22:27	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0688			mg/L	0.0002	0.001	04/07/14 15:57	msh
Arsenic, total	M200.8 ICP-MS	1	0.0614			mg/L	0.0002	0.001	04/03/14 22:27	msh
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	03/27/14 17:06	aeb
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	04/01/14 16:39	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:46	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	04/03/14 22:27	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 17:06	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:49	jjc
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	03/27/14 17:06	aeb
Boron, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	04/01/14 10:49	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:46	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:27	msh
Calcium, dissolved	M200.7 ICP	1	51.1			mg/L	0.1	0.5	03/27/14 17:06	aeb
Calcium, total	M200.7 ICP	1	51.4			mg/L	0.1	0.5	04/01/14 10:49	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/07/14 15:57	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/03/14 22:27	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00024	B		mg/L	0.00005	0.0003	04/07/14 15:57	msh
Cobalt, total	M200.8 ICP-MS	1	0.00020	B		mg/L	0.00005	0.0003	04/03/14 22:27	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 15:57	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/03/14 22:27	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:06	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:49	jjc
Iron, dissolved	M200.7 ICP	1	0.09			mg/L	0.02	0.05	03/27/14 17:06	aeb
Iron, total	M200.7 ICP	1	0.14			mg/L	0.02	0.05	04/01/14 10:49	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:57	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	04/03/14 22:27	msh
Lithium, dissolved	M200.7 ICP	1	0.187			mg/L	0.008	0.04	03/27/14 17:06	aeb
Lithium, total	M200.7 ICP	1	0.200			mg/L	0.008	0.04	04/01/14 10:49	jjc
Magnesium, dissolved	M200.7 ICP	1	5.5			mg/L	0.2	1	03/27/14 17:06	aeb
Magnesium, total	M200.7 ICP	1	5.6			mg/L	0.2	1	04/01/14 10:49	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0838			mg/L	0.0005	0.003	04/07/14 15:57	msh
Manganese, total	M200.8 ICP-MS	1	0.1029			mg/L	0.0005	0.003	04/03/14 22:27	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B	*	ng/L	0.2	0.5	04/01/14 18:12	las
Mercury, total	M1631, Atomic Fluorescence	1	0.9			ng/L	0.2	0.5	04/03/14 10:53	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0110			mg/L	0.0005	0.003	04/07/14 15:57	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0114			mg/L	0.0005	0.003	04/03/14 22:27	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/07/14 15:57	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/03/14 22:27	msh
Potassium, dissolved	M200.7 ICP	1	25.6			mg/L	0.2	1	03/27/14 17:06	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59763

ACZ Sample ID: ***L17433-07***
Date Sampled: *03/24/14 15:15*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	26.3			mg/L	0.2	1	04/01/14 10:49	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:06	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:49	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	04/09/14 4:46	pmc
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	04/09/14 22:12	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 15:57	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:27	msh
Sodium, dissolved	M200.7 ICP	1	291			mg/L	0.2	1	03/27/14 17:06	aeb
Sodium, total	M200.7 ICP	1	295			mg/L	0.2	1	04/01/14 10:49	jjc
Strontium, dissolved	M200.7 ICP	1	0.166			mg/L	0.005	0.03	03/27/14 17:06	aeb
Strontium, total	M200.7 ICP	1	0.173			mg/L	0.005	0.03	04/01/14 10:49	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 15:57	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:27	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 15:57	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/03/14 22:27	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 17:06	aeb
Titanium, total	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	04/01/14 10:49	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	04/07/14 15:57	msh
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	04/03/14 22:27	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0002	0.001	04/07/14 15:57	msh
Vanadium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0002	0.001	04/03/14 22:27	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/27/14 17:06	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	04/01/14 10:49	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: 59763

ACZ Sample ID: ***L17433-07***
Date Sampled: *03/24/14 15:15*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	166			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	166			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	10	19.6	B	*	mg/L	5	25	04/03/14 21:17	tcd
Conductivity @25C	SM2510B	1	1720			umhos/cm	1	10	03/27/14 4:56	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 13:59	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 15:03	tcd
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	1	5	04/03/14 21:17	tcd
Hardness as CaCO3	SM2340B - Calculation		150			mg/L	1	7	04/14/14 8:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	04/05/14 14:23	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	04/02/14 12:58	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	23			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	04/02/14 23:53	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1170		*	mg/L	10	20	03/28/14 15:08	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/28/14 15:26	dcw
Sulfate	M300.0 - Ion Chromatography	10	580		*	mg/L	5	25	04/03/14 21:17	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L17433-08***
Date Sampled: *03/24/14 17:50*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								04/01/14 15:32	tcd
Cyanide, WAD	SM4500-CN I- distillation								04/02/14 10:45	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								04/01/14 16:15	bsu
Total Hot Plate Digestion	M200.2 ICP								03/31/14 13:15	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								04/02/14 12:01	las

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L17433-08***
Date Sampled: *03/24/14 17:50*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	03/27/14 17:09	aeb
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	04/01/14 10:52	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/07/14 16:00	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	04/03/14 22:31	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0086			mg/L	0.0002	0.001	04/07/14 16:00	msh
Arsenic, total	M200.8 ICP-MS	1	0.0078			mg/L	0.0002	0.001	04/03/14 22:31	msh
Barium, dissolved	M200.7 ICP	1	0.015	B		mg/L	0.003	0.02	03/27/14 17:09	aeb
Barium, total	M200.7 ICP	1	0.022			mg/L	0.003	0.02	04/01/14 16:42	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/09/14 4:49	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	04/03/14 22:31	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	03/27/14 17:09	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	04/01/14 10:52	jjc
Boron, dissolved	M200.7 ICP	1	0.20			mg/L	0.01	0.05	03/27/14 17:09	aeb
Boron, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	04/01/14 10:52	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/09/14 4:49	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:31	msh
Calcium, dissolved	M200.7 ICP	1	4.7			mg/L	0.1	0.5	03/27/14 17:09	aeb
Calcium, total	M200.7 ICP	1	4.8			mg/L	0.1	0.5	04/01/14 10:52	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/07/14 16:00	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	04/03/14 22:31	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	04/07/14 16:00	msh
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	04/03/14 22:31	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/07/14 16:00	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	04/03/14 22:31	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:09	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:52	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	03/27/14 17:09	aeb
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	04/01/14 10:52	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	04/07/14 16:00	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	04/03/14 22:31	msh
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	03/27/14 17:09	aeb
Lithium, total	M200.7 ICP	1	0.022	B		mg/L	0.008	0.04	04/01/14 10:52	jjc
Magnesium, dissolved	M200.7 ICP	1	1.1			mg/L	0.2	1	03/27/14 17:09	aeb
Magnesium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	04/01/14 10:52	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0060			mg/L	0.0005	0.003	04/07/14 16:00	msh
Manganese, total	M200.8 ICP-MS	1	0.0067			mg/L	0.0005	0.003	04/03/14 22:31	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B	*	ng/L	0.2	0.5	04/01/14 18:17	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	04/03/14 11:15	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0083			mg/L	0.0005	0.003	04/07/14 16:00	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	04/03/14 22:31	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/07/14 16:00	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	04/03/14 22:31	msh
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.2	1	03/27/14 17:09	aeb

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L17433-08***
Date Sampled: *03/24/14 17:50*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.1			mg/L	0.2	1	04/01/14 10:52	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	03/27/14 17:09	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	04/01/14 10:52	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	04/09/14 4:49	pmc
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	04/09/14 22:15	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/07/14 16:00	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	04/03/14 22:31	msh
Sodium, dissolved	M200.7 ICP	1	81.6			mg/L	0.2	1	03/27/14 17:09	aeb
Sodium, total	M200.7 ICP	1	81.2			mg/L	0.2	1	04/01/14 10:52	jjc
Strontium, dissolved	M200.7 ICP	1	0.035			mg/L	0.005	0.03	03/27/14 17:09	aeb
Strontium, total	M200.7 ICP	1	0.042			mg/L	0.005	0.03	04/01/14 10:52	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/07/14 16:00	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	04/03/14 22:31	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/07/14 16:00	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	04/03/14 22:31	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	03/27/14 17:09	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	04/01/14 10:52	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	04/07/14 16:00	msh
Uranium, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	04/03/14 22:31	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0002	0.001	04/07/14 16:00	msh
Vanadium, total	M200.8 ICP-MS	1	0.0033			mg/L	0.0002	0.001	04/03/14 22:31	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	03/27/14 17:09	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	04/01/14 10:52	jjc

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L17433-08***
Date Sampled: *03/24/14 17:50*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	120			mg/L	2	20	03/27/14 0:00	dcw
Carbonate as CaCO3		1	4	B		mg/L	2	20	03/27/14 0:00	dcw
Hydroxide as CaCO3		1		U		mg/L	2	20	03/27/14 0:00	dcw
Total Alkalinity		1	123			mg/L	2	20	03/27/14 0:00	dcw
Chloride	M300.0 - Ion Chromatography	1	8.60		*	mg/L	0.5	2.5	04/03/14 21:35	tcd
Conductivity @25C	SM2510B	1	374			umhos/cm	1	10	03/27/14 5:05	dcw
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 14:00	tcd
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	04/02/14 15:04	tcd
Fluoride	M300.0 - Ion Chromatography	1	0.69		*	mg/L	0.1	0.5	04/03/14 21:35	tcd
Hardness as CaCO3	SM2340B - Calculation		16			mg/L	1	7	04/14/14 8:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.35		*	mg/L	0.02	0.1	04/05/14 14:24	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.5	04/02/14 12:59	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	03/27/14 0:00	dcw
pH measured at		1	23			C	0.1	0.1	03/27/14 0:00	dcw
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.12		*	mg/L	0.01	0.05	04/02/14 23:54	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260		*	mg/L	10	20	03/28/14 15:11	enb
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	03/28/14 15:28	dcw
Sulfate	M300.0 - Ion Chromatography	1	25.8		*	mg/L	0.5	2.5	04/03/14 21:35	tcd

SPF Water Engineering
Project ID: Calico 1st Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L17433-09***
Date Sampled: *03/24/14 17:40*
Date Received: *03/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	04/03/14 11:20	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L17433***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281PBW1	PBW	03/26/14 16:40				U	mg/L		-20	20			
WG361281LCSW3	LCSW	03/26/14 16:59	WC140313-	820.0001		833.3	mg/L	101.6	90	110			
WG361281LCSW6	LCSW	03/26/14 19:51	WC140313-	820.0001		838.3	mg/L	102.2	90	110			
WG361281PBW2	PBW	03/26/14 20:01				2.5	mg/L		-20	20			
WG361281LCSW9	LCSW	03/26/14 23:25	WC140313-	820.0001		843.4	mg/L	102.9	90	110			
WG361281PBW3	PBW	03/26/14 23:35				2.6	mg/L		-20	20			
WG361281LCSW12	LCSW	03/27/14 2:25	WC140313-	820.0001		834.8	mg/L	101.8	90	110			
WG361281PBW4	PBW	03/27/14 2:35				2.9	mg/L		-20	20			
L17433-08DUP	DUP	03/27/14 5:14			123	125.4	mg/L				1.9	20	
WG361281LCSW15	LCSW	03/27/14 5:33	WC140313-	820.0001		847.2	mg/L	103.3	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.929	mg/L	96.5	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.09	0.09			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1.0011		.996	mg/L	99.5	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1.0011	U	.988	mg/L	98.7	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1.0011	U	.991	mg/L	99	85	115	0.3	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.961	mg/L	98.1	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.09	0.09			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.066	0.066			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1.0011		1.026	mg/L	102.5	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1.0011	19.9	21.14	mg/L	123.9	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1.0011	19.9	21.27	mg/L	136.8	70	130	0.61	20	M3
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1.0011	.37	2.095	mg/L	172.3	70	130			M1
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1.0011	.37	2.147	mg/L	177.5	70	130	2.45	20	M1

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.02002		.02192	mg/L	109.5	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0012	0.0012			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.01		.00941	mg/L	94.1	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.01	U	.00875	mg/L	87.5	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.01	U	.00894	mg/L	89.4	70	130	2.15	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.02002		.02146	mg/L	107.2	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0012	0.0012			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00088	0.00088			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.01		.01032	mg/L	103.2	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.01	U	.01017	mg/L	101.7	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.01	U	.01017	mg/L	101.7	70	130	0	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04934	mg/L	98.7	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0006	0.0006			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.0501		.05197	mg/L	103.7	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.0501	.0011	.05177	mg/L	101.1	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.0501	.0011	.05029	mg/L	98.2	70	130	2.9	20	
WG362063													
WG362063ICV	ICV	04/10/14 5:36	MS140331-9	.05		.05049	mg/L	101	90	110			
WG362063ICB	ICB	04/10/14 5:39				U	mg/L		-0.0006	0.0006			
WG362063LFB	LFB	04/10/14 5:43	MS140331-2	.0501		.04454	mg/L	88.9	85	115			
L17282-01AS	AS	04/10/14 5:49	MS140331-2	.0501	.0042	.05282	mg/L	97	70	130			
L17282-01ASD	ASD	04/10/14 5:52	MS140331-2	.0501	.0042	.05521	mg/L	101.8	70	130	4.42	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.0505	mg/L	101	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0006	0.0006			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00044	0.00044			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.0501		.0524	mg/L	104.6	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.0501	.0078	.05586	mg/L	95.9	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.0501	.0078	.05554	mg/L	95.3	70	130	0.57	20	
WG361975													
WG361975ICV	ICV	04/09/14 21:56	MS140331-9	.05		.05079	mg/L	101.6	90	110			
WG361975ICB	ICB	04/09/14 21:59				U	mg/L		-0.0006	0.0006			
WG361557LRB	LRB	04/09/14 22:02				U	mg/L		-0.00044	0.00044			
WG361557LFB	LFB	04/09/14 22:05	MS140331-2	.0501		.05462	mg/L	109	85	115			
L17433-08LFM	LFM	04/09/14 22:18	MS140331-2	.0501	.008	.05742	mg/L	98.6	70	130			
L17433-08LFMD	LFMD	04/09/14 22:21	MS140331-2	.0501	.008	.05763	mg/L	99.1	70	130	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.9548	mg/L	97.7	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.009	0.009			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	.5		.4842	mg/L	96.8	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	.5	.024	.5138	mg/L	98	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	.5	.024	.5161	mg/L	98.4	85	115	0.45	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361574													
WG361574ICV	ICV	04/01/14 15:18	II140228-1	2		1.9688	mg/L	98.4	95	105			
WG361574ICB	ICB	04/01/14 15:24				U	mg/L		-0.009	0.009			
WG361468LRB	LRB	04/01/14 15:37				U	mg/L		-0.0066	0.0066			
WG361468LFB	LFB	04/01/14 15:40	II140317-2	.5		.5051	mg/L	101	85	115			
L17381-01LFM	LFM	04/01/14 15:46	II140317-2	.5	.024	.5221	mg/L	99.6	70	130			
L17381-01LFMD	LFMD	04/01/14 15:49	II140317-2	.5	.024	.5206	mg/L	99.3	70	130	0.29	20	
L17433-03LFM	LFM	04/01/14 16:30	II140317-2	.5	.056	.565	mg/L	101.8	70	130			
L17433-03LFMD	LFMD	04/01/14 16:33	II140317-2	.5	.056	.5655	mg/L	101.9	70	130	0.09	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361971													
WG361971ICV	ICV	04/09/14 3:41	MS140331-9	.05		.04727	mg/L	94.5	90	110			
WG361971ICB	ICB	04/09/14 3:44				U	mg/L		-0.00015	0.00015			
WG361971LFB	LFB	04/09/14 3:47	MS140331-2	.05005		.04547	mg/L	90.8	85	115			
L17399-08AS	AS	04/09/14 4:03	MS140331-2	.05005	U	.05038	mg/L	100.7	70	130			
L17399-08ASD	ASD	04/09/14 4:07	MS140331-2	.05005	U	.05034	mg/L	100.6	70	130	0.08	20	
L17475-03AS	AS	04/09/14 5:08	MS140331-2	.05005	.00058	.04971	mg/L	98.2	70	130			
L17475-03ASD	ASD	04/09/14 5:12	MS140331-2	.05005	.00058	.05002	mg/L	98.8	70	130	0.62	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04824	mg/L	96.5	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.00015	0.00015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00011	0.00011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.04925	mg/L	98.4	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	U	.05031	mg/L	100.5	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	U	.05041	mg/L	100.7	70	130	0.2	20	
WG361975													
WG361975ICV	ICV	04/09/14 21:56	MS140331-9	.05		.04566	mg/L	91.3	90	110			
WG361975ICB	ICB	04/09/14 21:59				U	mg/L		-0.00015	0.00015			
WG361557LRB	LRB	04/09/14 22:02				U	mg/L		-0.00011	0.00011			
WG361557LFB	LFB	04/09/14 22:05	MS140331-2	.05005		.04832	mg/L	96.5	85	115			
L17433-08LFM	LFM	04/09/14 22:18	MS140331-2	.05005	U	.0473	mg/L	94.5	70	130			
L17433-08LFMD	LFMD	04/09/14 22:21	MS140331-2	.05005	U	.04756	mg/L	95	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.976	mg/L	98.8	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.12	0.12			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	.999		.988	mg/L	98.9	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	.999	U	1.001	mg/L	100.2	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	.999	U	.99	mg/L	99.1	85	115	1.1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.999	mg/L	100	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.12	0.12			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.088	0.088			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	.999		1.023	mg/L	102.4	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	.999	U	.963	mg/L	96.4	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	.999	U	.986	mg/L	98.7	70	130	2.36	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	.999	U	1.018	mg/L	101.9	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	.999	U	1.023	mg/L	102.4	70	130	0.49	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.992	mg/L	99.6	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.03	0.03			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	.5005		.493	mg/L	98.5	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	.5005	.08	.572	mg/L	98.3	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	.5005	.08	.573	mg/L	98.5	85	115	0.17	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.967	mg/L	98.4	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.03	0.03			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.022	0.022			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	.5005		.501	mg/L	100.1	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	.5005	.07	.569	mg/L	99.7	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	.5005	.07	.573	mg/L	100.5	70	130	0.7	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	.5005	.07	.566	mg/L	99.1	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	.5005	.07	.557	mg/L	97.3	70	130	1.6	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361971													
WG361971ICV	ICV	04/09/14 3:41	MS140331-9	.05		.04887	mg/L	97.7	90	110			
WG361971ICB	ICB	04/09/14 3:44				U	mg/L		-0.0003	0.0003			
WG361971LFB	LFB	04/09/14 3:47	MS140331-2	.0501		.04657	mg/L	93	85	115			
L17399-08AS	AS	04/09/14 4:03	MS140331-2	.0501	.0001	.04939	mg/L	98.4	70	130			
L17399-08ASD	ASD	04/09/14 4:07	MS140331-2	.0501	.0001	.04913	mg/L	97.9	70	130	0.53	20	
L17475-03AS	AS	04/09/14 5:08	MS140331-2	.0501	U	.04922	mg/L	98.2	70	130			
L17475-03ASD	ASD	04/09/14 5:12	MS140331-2	.0501	U	.05036	mg/L	100.5	70	130	2.29	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04922	mg/L	98.4	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.0501		.04993	mg/L	99.7	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.0501	U	.04877	mg/L	97.3	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.0501	U	.04872	mg/L	97.2	70	130	0.1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	100		98.28	mg/L	98.3	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.3	0.3			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	67.98099		68.64	mg/L	101	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	67.98099	37.9	104.5	mg/L	98	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	67.98099	37.9	105.5	mg/L	99.4	85	115	0.95	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	100		97.69	mg/L	97.7	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.3	0.3			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.22	0.22			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	67.98099		69.12	mg/L	101.7	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	67.98099	117	185	mg/L	100	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	67.98099	117	184.8	mg/L	99.7	70	130	0.11	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	67.98099	38.5	106.8	mg/L	100.5	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	67.98099	38.5	107.4	mg/L	101.4	70	130	0.56	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361726													
WG361726LFB1	LFB	04/03/14 13:31	WI140306-2	30		30.1	mg/L	100.3	90	110			
L17370-02DUP	DUP	04/03/14 18:18			94.2	96.7	mg/L				2.6	20	RA
L17380-01AS	AS	04/03/14 18:54	WI140306-2	3000	1600	4640	mg/L	101.3	90	110			
WG361726LFB2	LFB	04/03/14 22:11	WI140306-2	30		30.1	mg/L	100.3	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04641	mg/L	92.8	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0015	0.0015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.04924	mg/L	98.4	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	U	.04479	mg/L	89.5	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	U	.04478	mg/L	89.5	70	130	0.02	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04907	mg/L	98.1	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0015	0.0015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.0011	0.0011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.04887	mg/L	97.6	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	U	.04594	mg/L	91.8	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	U	.04602	mg/L	91.9	70	130	0.17	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04881	mg/L	97.6	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.00015	0.00015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.04955	mg/L	99	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	.00027	.04744	mg/L	94.2	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	.00027	.04802	mg/L	95.4	70	130	1.22	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04905	mg/L	98.1	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.00015	0.00015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00011	0.00011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.04929	mg/L	98.5	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	.00008	.04886	mg/L	97.5	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	.00008	.04923	mg/L	98.2	70	130	0.75	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281LCSW2	LCSW	03/26/14 16:45	PCN43577	1408.8		1456.4	umhos/cm	103.4	90	110			
WG361281LCSW5	LCSW	03/26/14 19:37	PCN43577	1408.8		1434.2	umhos/cm	101.8	90	110			
WG361281LCSW8	LCSW	03/26/14 23:11	PCN43577	1408.8		1423.1	umhos/cm	101	90	110			
WG361281LCSW11	LCSW	03/27/14 2:11	PCN43577	1408.8		1409	umhos/cm	100	90	110			
L17433-08DUP	DUP	03/27/14 5:14			374	381	umhos/cm				1.9	20	
WG361281LCSW14	LCSW	03/27/14 5:19	PCN43577	1408.8		1395.8	umhos/cm	99.1	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04595	mg/L	91.9	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0015	0.0015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.04884	mg/L	97.6	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	U	.04315	mg/L	86.2	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	U	.04308	mg/L	86.1	70	130	0.16	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04855	mg/L	97.1	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0015	0.0015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.0011	0.0011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.04923	mg/L	98.4	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	U	.0444	mg/L	88.7	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	U	.04483	mg/L	89.6	70	130	0.96	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361653													
WG361653ICV	ICV	04/02/14 13:09	WI140322-7	.3		.2957	mg/L	98.6	90	110			
WG361653ICB	ICB	04/02/14 13:10				U	mg/L		-0.003	0.003			
WG361655													
WG361602LRB	LRB	04/02/14 13:47				U	mg/L		-0.003	0.003			
WG361602LFB	LFB	04/02/14 13:48	WI140322-4	.2		.215	mg/L	107.5	90	110			
L17386-01DUP	DUP	04/02/14 13:50			U	U	mg/L				0	20	RA
L17392-01LFM	LFM	04/02/14 13:52	WI140322-4	.2	.064	.2682	mg/L	102.1	90	110			

SPF Water Engineering

ACZ Project ID: ***L17433***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361515													
WG361515ICV	ICV	03/31/14 15:14	WI140322-7	.3		.2928	mg/L	97.6	90	110			
WG361515ICB	ICB	03/31/14 15:15				U	mg/L		-0.003	0.003			
WG361524													
WG361496LRB	LRB	03/31/14 16:07				U	mg/L		-0.003	0.003			
WG361496LFB	LFB	03/31/14 16:08	WI140322-6	.2		.1924	mg/L	96.2	90	110			
L17387-01DUP	DUP	03/31/14 16:21			.026	.0282	mg/L				8.1	20	RA
L17388-01LFM	LFM	03/31/14 16:23	WI140322-6	.2	U	.1854	mg/L	92.7	90	110			
WG361653													
WG361653ICV	ICV	04/02/14 13:09	WI140322-7	.3		.2957	mg/L	98.6	90	110			
WG361653ICB	ICB	04/02/14 13:10				U	mg/L		-0.003	0.003			
WG361673													
WG361626LRB	LRB	04/02/14 14:57				U	mg/L		-0.003	0.003			
WG361626LFB	LFB	04/02/14 14:58	WI140322-6	.2		.2036	mg/L	101.8	90	110			
L17433-02LFM	LFM	04/02/14 15:00	WI140322-6	.2	U	.202	mg/L	101	90	110			
L17433-03DUP	DUP	04/02/14 15:01			U	U	mg/L				0	20	RA
WG361810													
WG361810ICV	ICV	04/04/14 15:38	WI140322-7	.3		.2935	mg/L	97.8	90	110			
WG361810ICB	ICB	04/04/14 15:39				U	mg/L		-0.003	0.003			
WG361798LRB	LRB	04/04/14 15:40				U	mg/L		-0.003	0.003			
WG361798LFB	LFB	04/04/14 15:41	WI140322-6	.2		.1902	mg/L	95.1	90	110			
L17433-06DUP	DUP	04/04/14 15:43			U	U	mg/L				0	20	RA
L17466-01LFM	LFM	04/04/14 15:44	WI140322-6	.2	U	.1853	mg/L	92.7	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG361726													
WG361726LFB1	LFB	04/03/14 13:31	WI140306-2	1.5		1.52	mg/L	101.3	90	110			
L17370-02DUP	DUP	04/03/14 18:18			U	U	mg/L				0	20	RA
L17380-01AS	AS	04/03/14 18:54	WI140306-2	150	57	212	mg/L	103.3	90	110			
WG361726LFB2	LFB	04/03/14 22:11	WI140306-2	1.5		1.51	mg/L	100.7	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.96	mg/L	98	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.3	0.3			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1.001		1.01	mg/L	100.9	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1.001	U	.96	mg/L	95.9	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1.001	U	1.05	mg/L	104.9	85	115	8.96	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.98	mg/L	99	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.3	0.3			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.22	0.22			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1.001		1.03	mg/L	102.9	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1.001	U	1.03	mg/L	102.9	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1.001	U	1.01	mg/L	100.9	70	130	1.96	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1.001	U	1.04	mg/L	103.9	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1.001	U	1.02	mg/L	101.9	70	130	1.94	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.965	mg/L	98.3	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.06	0.06			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1.0014		.987	mg/L	98.6	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1.0014	U	.981	mg/L	98	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1.0014	U	.994	mg/L	99.3	85	115	1.32	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.946	mg/L	97.3	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.06	0.06			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.044	0.044			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1.0014		1.025	mg/L	102.4	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1.0014	.36	1.322	mg/L	96.1	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1.0014	.36	1.326	mg/L	96.5	70	130	0.3	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1.0014	.13	1.285	mg/L	116.3	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1.0014	.13	1.298	mg/L	117.6	70	130	1.01	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04661	mg/L	93.2	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0003	0.0003			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.04516	mg/L	90.2	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	U	.04432	mg/L	88.6	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	U	.0446	mg/L	89.1	70	130	0.63	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.05052	mg/L	101	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.04808	mg/L	96.1	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	.0002	.0489	mg/L	97.3	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	.0002	.04873	mg/L	97	70	130	0.35	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.9542	mg/L	97.7	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.024	0.024			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1		.9555	mg/L	95.6	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1	.038	1.003	mg/L	96.5	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1	.038	1.012	mg/L	97.4	85	115	0.89	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.9588	mg/L	97.9	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.024	0.024			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.0176	0.0176			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1		.9826	mg/L	98.3	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1	.141	1.121	mg/L	98	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1	.141	1.13	mg/L	98.9	70	130	0.8	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1	.055	1.061	mg/L	100.6	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1	.055	1.057	mg/L	100.2	70	130	0.38	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	100		96.64	mg/L	96.6	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.6	0.6			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	50.00131		48.44	mg/L	96.9	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	50.00131	6.8	54.9	mg/L	96.2	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	50.00131	6.8	55.38	mg/L	97.2	85	115	0.87	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	100		95.98	mg/L	96	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.6	0.6			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.44	0.44			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	50.00131		48.6	mg/L	97.2	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	50.00131	52	100.3	mg/L	96.6	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	50.00131	52	100.6	mg/L	97.2	70	130	0.3	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	50.00131	6.5	55.21	mg/L	97.4	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	50.00131	6.5	55.34	mg/L	97.7	70	130	0.24	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.05095	mg/L	101.9	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0015	0.0015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.0501		.04996	mg/L	99.7	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.0501	.0026	.05095	mg/L	96.5	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.0501	.0026	.05138	mg/L	97.4	70	130	0.84	20	
WG362063													
WG362063ICV	ICV	04/10/14 5:36	MS140331-9	.05		.0496	mg/L	99.2	90	110			
WG362063ICB	ICB	04/10/14 5:39				U	mg/L		-0.0015	0.0015			
WG362063LFB	LFB	04/10/14 5:43	MS140331-2	.0501		.0441	mg/L	88	85	115			
L17282-01AS	AS	04/10/14 5:49	MS140331-2	.0501	.2043	.2505	mg/L	92.2	70	130			
L17282-01ASD	ASD	04/10/14 5:52	MS140331-2	.0501	.2043	.2507	mg/L	92.6	70	130	0.08	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.05138	mg/L	102.8	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0015	0.0015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.0011	0.0011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.0501		.04872	mg/L	97.2	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.0501	.0067	.05542	mg/L	97.2	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.0501	.0067	.05567	mg/L	97.7	70	130	0.45	20	
WG361975													
WG361975ICV	ICV	04/09/14 21:56	MS140331-9	.05		.04939	mg/L	98.8	90	110			
WG361975ICB	ICB	04/09/14 21:59				U	mg/L		-0.0015	0.0015			
WG361557LRB	LRB	04/09/14 22:02				U	mg/L		-0.0011	0.0011			
WG361557LFB	LFB	04/09/14 22:05	MS140331-2	.0501		.04931	mg/L	98.4	85	115			
L17433-08LFM	LFM	04/09/14 22:18	MS140331-2	.0501	.0068	.0558	mg/L	97.8	70	130			
L17433-08LFMD	LFMD	04/09/14 22:21	MS140331-2	.0501	.0068	.05532	mg/L	96.8	70	130	0.86	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361393													
WG361393ICV	ICV	03/28/14 15:59	HG140325-4	10		9.87	ng/L	98.7	79	121			
WG361393ICB	ICB	03/28/14 16:04				U	ng/L		-0.5	0.5			
WG361562													
WG361562CCV1	CCV	04/01/14 15:50	HG140325-4	10		9.68	ng/L	96.8	76.5	123.4			
WG361562CCB1	CCB	04/01/14 15:55				U	ng/L		-0.5	0.5			
WG361562PQV	PQV	04/01/14 16:00	HG140325-6	.5		.43	ng/L	86	70	130			
WG361562LFB	LFB	04/01/14 16:12	HG140325-5	2		1.5	ng/L	75	71	125			
L17362-01MS	MS	04/01/14 16:26	HG140325-5	2	U	1.52	ng/L	76	71	125			
L17362-01MSD	MSD	04/01/14 16:31	HG140325-5	2	U	1.53	ng/L	76.5	71	125	0.66	24	
WG361562CCV2	CCV	04/01/14 17:01	HG140325-4	10		9.46	ng/L	94.6	76.5	123.4			
WG361562CCB2	CCB	04/01/14 17:06				U	ng/L		-0.5	0.5			
WG361562CCV3	CCV	04/01/14 17:47	HG140325-4	10		9.19	ng/L	91.9	76.5	123.4			
WG361562CCB3	CCB	04/01/14 17:52				U	ng/L		-0.5	0.5			
L17433-06MS	MS	04/01/14 18:02	HG140325-5	2	.5	1.83	ng/L	66.5	71	125			M2
L17433-06MSD	MSD	04/01/14 18:07	HG140325-5	2	.5	1.82	ng/L	66	71	125	0.55	24	M2
WG361562CCV4	CCV	04/01/14 18:22	HG140325-4	10		9.71	ng/L	97.1	76.5	123.4			
WG361562CCB4	CCB	04/01/14 18:27				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361393													
WG361393ICV	ICV	03/28/14 15:59	HG140325-4	10		9.87	ng/L	98.7	79	121			
WG361393ICB	ICB	03/28/14 16:04				U	ng/L		-0.5	0.5			
WG361711													
WG361711CCV1	CCV	04/03/14 9:54	HG140403-3	10		9.56	ng/L	95.6	76.5	123.4			
WG361711CCB1	CCB	04/03/14 9:59				U	ng/L		-0.5	0.5			
WG361711PQV	PQV	04/03/14 10:04	HG140403-5	.5		.56	ng/L	112	70	130			
WG361711LFB	LFB	04/03/14 10:09	HG140403-4	2		1.95	ng/L	97.5	71	125			
L17433-01MS	MS	04/03/14 10:22	HG140403-4	2	U	1.9	ng/L	95	71	125			
L17433-01MSD	MSD	04/03/14 10:27	HG140403-4	2	U	1.81	ng/L	90.5	71	125	4.85	24	
WG361711CCV2	CCV	04/03/14 11:05	HG140403-3	10		9.4	ng/L	94	76.5	123.4			
WG361711CCB2	CCB	04/03/14 11:10				.22	ng/L		-0.5	0.5			
WG361711CCV3	CCV	04/03/14 11:55	HG140403-3	10		9.49	ng/L	94.9	76.5	123.4			
WG361711CCB3	CCB	04/03/14 12:00				.21	ng/L		-0.5	0.5			
WG361711CCV4	CCV	04/03/14 12:48	HG140403-3	10		10.2	ng/L	102	76.5	123.4			
WG361711CCB4	CCB	04/03/14 12:53				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.01998		.01898	mg/L	95	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0015	0.0015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05		.04743	mg/L	94.9	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05	.0007	.04651	mg/L	91.6	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05	.0007	.04691	mg/L	92.4	70	130	0.86	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.01998		.0191	mg/L	95.6	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0015	0.0015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.0011	0.0011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05		.0479	mg/L	95.8	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05	.009	.05728	mg/L	96.6	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05	.009	.05812	mg/L	98.2	70	130	1.46	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04612	mg/L	92.2	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0018	0.0018			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05		.04789	mg/L	95.8	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05	U	.04156	mg/L	83.1	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05	U	.04115	mg/L	82.3	70	130	0.99	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.0481	mg/L	96.2	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0018	0.0018			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00132	0.00132			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05		.04792	mg/L	95.8	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05	U	.04361	mg/L	87.2	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05	U	.04393	mg/L	87.9	70	130	0.73	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361832													
WG361832ICV	ICV	04/05/14 13:27	WI140116-3	2.416		2.386	mg/L	98.8	90	110			
WG361832ICB	ICB	04/05/14 13:28				U	mg/L		-0.06	0.06			
WG361834													
WG361834LFB1	LFB	04/05/14 14:01	WI140215-3	2		2.024	mg/L	101.2	90	110			
L17225-02AS	AS	04/05/14 14:03	WI140215-3	2	.04	2.032	mg/L	99.6	90	110			
L17305-01DUP	DUP	04/05/14 14:05			U	U	mg/L				0	20	RA
L17433-03AS	AS	04/05/14 14:20	WI140215-3	2	.83	2.996	mg/L	108.3	90	110			
L17433-06DUP	DUP	04/05/14 14:22			U	U	mg/L				0	20	RA
WG361834LFB2	LFB	04/05/14 14:35	WI140215-3	2		2.05	mg/L	102.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L17433***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361628													
WG361628ICV	ICV	04/02/14 10:37	WI131021-1	1.003		.985	mg/L	98.2	90	110			
WG361628ICB	ICB	04/02/14 10:40				U	mg/L		-0.15	0.15			
WG361637													
WG361637LFB1	LFB	04/02/14 11:42	WI140113-8	1		.999	mg/L	99.9	90	110			
WG361637LFB2	LFB	04/02/14 12:47	WI140113-8	1		.994	mg/L	99.4	90	110			
L17414-19AS	AS	04/02/14 12:49	WI140113-8	1	U	.988	mg/L	98.8	90	110			
L17433-01DUP	DUP	04/02/14 12:51			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361281													
WG361281LCSW1	LCSW	03/26/14 16:43	PCN40852	6		5.95	units	99.2					
WG361281LCSW4	LCSW	03/26/14 19:35	PCN40852	6		5.97	units	99.5					
WG361281LCSW7	LCSW	03/26/14 23:09	PCN40852	6		5.98	units	99.7					
WG361281LCSW10	LCSW	03/27/14 2:10	PCN40852	6		5.97	units	99.5					
L17433-08DUP	DUP	03/27/14 5:14			8.4	8.38	units				0.2	20	
WG361281LCSW13	LCSW	03/27/14 5:17	PCN40852	6		5.96	units	99.3					

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361685													
WG361685ICV	ICV	04/02/14 18:57	WI140401-5	.65228		.64	mg/L	98.1	90	110			
WG361685ICB	ICB	04/02/14 18:59				U	mg/L		-0.03	0.03			
WG361691													
WG361579LRB	LRB	04/02/14 23:22				U	mg/L		-0.03	0.03			
WG361579LFB	LFB	04/02/14 23:23	WI140326-3	.5		.499	mg/L	99.8	90	110			
L17305-11LFM	LFM	04/02/14 23:41	WI140326-3	.5	.07	.712	mg/L	128.4	90	110			M1
L17305-12DUP	DUP	04/02/14 23:43			.1	.098	mg/L				2	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	20		19.36	mg/L	96.8	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.6	0.6			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	99.99364		99.14	mg/L	99.1	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	99.99364	5.8	105.2	mg/L	99.4	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	99.99364	5.8	105.7	mg/L	99.9	85	115	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	20		19.44	mg/L	97.2	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.6	0.6			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.44	0.44			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	99.99364		100.4	mg/L	100.4	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	99.99364	8.6	109.5	mg/L	100.9	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	99.99364	8.6	109.5	mg/L	100.9	70	130	0	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	99.99364	7.2	108.1	mg/L	100.9	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	99.99364	7.2	108.4	mg/L	101.2	70	130	0.28	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361441													
WG361441PBW	PBW	03/28/14 14:22				U	mg/L		-20	20			
WG361441LCSW	LCSW	03/28/14 14:25	PCN45344	260		252	mg/L	96.9	80	120			
L17433-02DUP	DUP	03/28/14 14:59			280	280	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361444													
WG361444PBW	PBW	03/28/14 15:00				U	mg/L		-15	15			
WG361444LCSW	LCSW	03/28/14 15:02	PCN45344	160		162	mg/L	101.3	80	120			
L17433-08DUP	DUP	03/28/14 15:31			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.99	mg/L	99.5	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.3	0.3			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1.0009		1.04	mg/L	103.9	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1.0009	U	1.04	mg/L	103.9	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1.0009	U	1.05	mg/L	104.9	85	115	0.96	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.98	mg/L	99	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.3	0.3			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.22	0.22			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1.0009		1.03	mg/L	102.9	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1.0009	U	1.01	mg/L	100.9	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1.0009	U	1.03	mg/L	102.9	70	130	1.96	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1.0009	U	1.06	mg/L	105.9	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1.0009	U	1.05	mg/L	104.9	70	130	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361971													
WG361971ICV	ICV	04/09/14 3:41	MS140331-9	.05		.05071	mg/L	101.4	90	110			
WG361971ICB	ICB	04/09/14 3:44				U	mg/L		-0.0003	0.0003			
WG361971LFB	LFB	04/09/14 3:47	MS140331-2	.05005		.04774	mg/L	95.4	85	115			
L17399-08AS	AS	04/09/14 4:03	MS140331-2	.05005	.0009	.05465	mg/L	107.4	70	130			
L17399-08ASD	ASD	04/09/14 4:07	MS140331-2	.05005	.0009	.05438	mg/L	106.9	70	130	0.5	20	
L17475-03AS	AS	04/09/14 5:08	MS140331-2	.05005	U	.05501	mg/L	109.9	70	130			
L17475-03ASD	ASD	04/09/14 5:12	MS140331-2	.05005	U	.05545	mg/L	110.8	70	130	0.8	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.05073	mg/L	101.5	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				.00019	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.05113	mg/L	102.2	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	.0004	.04666	mg/L	92.4	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	.0004	.04755	mg/L	94.2	70	130	1.89	20	
WG361975													
WG361975ICV	ICV	04/09/14 21:56	MS140331-9	.05		.05023	mg/L	100.5	90	110			
WG361975ICB	ICB	04/09/14 21:59				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/09/14 22:02				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/09/14 22:05	MS140331-2	.05005		.05411	mg/L	108.1	85	115			
L17433-08LFM	LFM	04/09/14 22:18	MS140331-2	.05005	.0004	.04771	mg/L	94.5	70	130			
L17433-08LFMD	LFMD	04/09/14 22:21	MS140331-2	.05005	.0004	.04816	mg/L	95.4	70	130	0.94	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.02002		.01942	mg/L	97	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.00015	0.00015			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.01002		.009461	mg/L	94.4	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.01002	U	.00886	mg/L	88.4	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.01002	U	.008921	mg/L	89	70	130	0.69	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.02002		.01988	mg/L	99.3	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.00015	0.00015			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00011	0.00011			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.01002		.009693	mg/L	96.7	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.01002	U	.009514	mg/L	95	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.01002	U	.009532	mg/L	95.1	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	100		98.6	mg/L	98.6	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.6	0.6			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	100.0393		99.21	mg/L	99.2	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	100.0393	25.3	123.6	mg/L	98.3	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	100.0393	25.3	124.2	mg/L	98.9	85	115	0.48	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	100		98.2	mg/L	98.2	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.6	0.6			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.44	0.44			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	100.0393		98.68	mg/L	98.6	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	100.0393	48.7	147.5	mg/L	98.8	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	100.0393	48.7	148.2	mg/L	99.5	70	130	0.47	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	100.0393	25.6	126.3	mg/L	100.7	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	100.0393	25.6	126.6	mg/L	101	70	130	0.24	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.9875	mg/L	99.4	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.015	0.015			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	.5		.4885	mg/L	97.7	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	.5	.196	.683	mg/L	97.4	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	.5	.196	.687	mg/L	98.2	85	115	0.58	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.9775	mg/L	98.9	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.015	0.015			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.011	0.011			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	.5		.492	mg/L	98.4	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	.5	.803	1.291	mg/L	97.6	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	.5	.803	1.297	mg/L	98.8	70	130	0.46	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	.5	.253	.7458	mg/L	98.6	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	.5	.253	.7472	mg/L	98.8	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L17433***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG361726													
WG361726LFB1	LFB	04/03/14 13:31	WI140306-2	30		30.4	mg/L	101.3	90	110			
L17370-02DUP	DUP	04/03/14 18:18			10.4	U	mg/L				200	20	RA
L17380-01AS	AS	04/03/14 18:54	WI140306-2	3000	376	3400	mg/L	100.8	90	110			
WG361726LFB2	LFB	04/03/14 22:11	WI140306-2	30		30	mg/L	100	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.0514	mg/L	102.8	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0003	0.0003			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.0502		.04954	mg/L	98.7	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.0502	U	.04603	mg/L	91.7	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.0502	U	.04632	mg/L	92.3	70	130	0.63	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.05333	mg/L	106.7	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.0502		.04983	mg/L	99.3	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.0502	U	.05108	mg/L	101.8	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.0502	U	.05085	mg/L	101.3	70	130	0.45	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.0501		.04958	mg/L	99	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0003	0.0003			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.0474	mg/L	94.7	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	U	.04539	mg/L	90.7	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	U	.04585	mg/L	91.6	70	130	1.01	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.0501		.05027	mg/L	100.3	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.05057	mg/L	101	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	U	.04863	mg/L	97.2	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	U	.0508	mg/L	101.5	70	130	4.36	20	

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ACZ Project ID: ***L17433***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.9268	mg/L	96.3	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.015	0.015			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	1		.9621	mg/L	96.2	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	1	U	.9693	mg/L	96.9	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	1	U	.9757	mg/L	97.6	85	115	0.66	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.9402	mg/L	97	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.015	0.015			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.011	0.011			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	1		1.003	mg/L	100.3	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	1	U	.9828	mg/L	98.3	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	1	U	.9884	mg/L	98.8	70	130	0.57	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	1	U	1.01	mg/L	101	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	1	U	1.009	mg/L	100.9	70	130	0.1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.05016	mg/L	100.3	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0003	0.0003			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05		.04998	mg/L	100	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05	.0012	.05141	mg/L	100.4	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05	.0012	.05153	mg/L	100.7	70	130	0.23	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.05219	mg/L	104.4	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0003	0.0003			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00022	0.00022			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05		.05122	mg/L	102.4	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05	.0007	.05317	mg/L	104.9	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05	.0007	.05313	mg/L	104.9	70	130	0.08	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361845													
WG361845ICV	ICV	04/07/14 14:18	MS140331-9	.05		.04521	mg/L	90.4	90	110			
WG361845ICB	ICB	04/07/14 14:21				U	mg/L		-0.0006	0.0006			
WG361845LFB	LFB	04/07/14 14:24	MS140331-2	.05005		.04963	mg/L	99.2	85	115			
L17399-08AS	AS	04/07/14 15:23	MS140331-2	.05005	.002	.049	mg/L	93.9	70	130			
L17399-08ASD	ASD	04/07/14 15:26	MS140331-2	.05005	.002	.04841	mg/L	92.7	70	130	1.21	20	

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ACZ Project ID: ***L17433***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361760													
WG361760ICV	ICV	04/03/14 20:59	MS140331-9	.05		.04863	mg/L	97.3	90	110			
WG361760ICB	ICB	04/03/14 21:02				U	mg/L		-0.0006	0.0006			
WG361557LRB	LRB	04/03/14 21:06				U	mg/L		-0.00044	0.00044			
WG361557LFB	LFB	04/03/14 21:09	MS140331-2	.05005		.05016	mg/L	100.2	85	115			
L17433-08LFM	LFM	04/03/14 22:34	MS140331-2	.05005	.0033	.0515	mg/L	96.3	70	130			
L17433-08LFMD	LFMD	04/03/14 22:37	MS140331-2	.05005	.0033	.05176	mg/L	96.8	70	130	0.5	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361340													
WG361340ICV	ICV	03/27/14 15:22	II140220-1	2		1.954	mg/L	97.7	95	105			
WG361340ICB	ICB	03/27/14 15:28				U	mg/L		-0.03	0.03			
WG361340LFB	LFB	03/27/14 15:41	II140317-2	.5005		.5	mg/L	99.9	85	115			
L17433-01AS	AS	03/27/14 16:44	II140317-2	.5005	U	.499	mg/L	99.7	85	115			
L17433-01ASD	ASD	03/27/14 16:47	II140317-2	.5005	U	.502	mg/L	100.3	85	115	0.6	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG361527													
WG361527ICV	ICV	04/01/14 9:28	II140228-1	2		1.913	mg/L	95.7	95	105			
WG361527ICB	ICB	04/01/14 9:34				U	mg/L		-0.03	0.03			
WG361468LRB	LRB	04/01/14 9:47				U	mg/L		-0.022	0.022			
WG361468LFB	LFB	04/01/14 9:50	II140317-2	.5005		.501	mg/L	100.1	85	115			
L17381-01LFM	LFM	04/01/14 9:56	II140317-2	.5005	.95	1.374	mg/L	88.7	70	130			
L17381-01LFMD	LFMD	04/01/14 9:59	II140317-2	.5005	.95	1.377	mg/L	89.3	70	130	0.22	20	
L17433-03LFM	LFM	04/01/14 10:40	II140317-2	.5005	.01	.498	mg/L	97.5	70	130			
L17433-03LFMD	LFMD	04/01/14 10:43	II140317-2	.5005	.01	.499	mg/L	97.7	70	130	0.2	20	

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ACZ Project ID: ***L17433***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17433-01	WG361527	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361726	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361524	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17433-02	WG361527	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361726	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361673	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: ***L17433***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17433-03	WG361527	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361562	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361726	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361673	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361441	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17433-04	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361673	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L17433-05	WG361562	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17433-06	WG361527	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361562	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361760	Selenium, total	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG361726	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361810	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361441	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17433-07	WG361527	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361760	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG361562	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361726	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361673	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361441	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L17433***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L17433-08	WG361527	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361760	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG361562	Mercury, dissolved	M1631, Atomic Fluorescence	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361726	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361655	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361673	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361834	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361637	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361691	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG361441	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG361444	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG361726	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 1st Quarter 2014 Sampling

ACZ Project ID: L17433
Date Received: 03/26/2014 09:38
Received By: mtb
Date Printed: 3/26/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19354	0.5	13	Yes
NA19355	0.3	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L17433

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]
If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN
Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 1st Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	per ACZ spec						
59772	3/24/14 11:05	GW	8	X							
59760	3/24/14 12:35	GW	8	X							
59760-DUP	3/24/14 12:40	GW	8	X							
cyanide blank	NA	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	3-25-14 13:00	LRL	3.26.14 0930

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L17433 Chain of Custody

1

C17433

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 1st Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW								
Deposit Re-Sample	3/16/14 12:35		2	X								

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*Analysis for total and dissolved low level mercury per SPF-2014-GW quote.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	3/25/14 13:00	MBC	3/26/14 0930

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

2

L17433

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 1st Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**Method 1631						
BLM	3/24/14 13:45	GW	8	X							
59763	3/24/14 15:15	GW	8	X							
Bishop	3/24/14 17:50	GW	8	X							
mercury trip blank	3/24/14 17:40	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Jason Thompson	3-25-14 13:00		3-26-14 0930

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

(3)

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 09, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2014 Sampli
ACZ Project ID: L19044

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 24, 2014. This project has been assigned to ACZ's project number, L19044. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19044. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 08, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 09, 2014

Project ID: Calico 2nd Quarter 2014 Sampli
ACZ Project ID: L19044

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on June 24, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19044. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19044. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L19044-01***
Date Sampled: *06/19/14 12:30*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 12:38	mpb
Cyanide, WAD	SM4500-CN I- distillation								06/30/14 14:33	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/01/14 10:33	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								06/26/14 21:21	las
Total Hot Plate Digestion	M200.2 ICP								06/30/14 16:06	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L19044-01***
Date Sampled: *06/19/14 12:30*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/25/14 22:34	aeb
Aluminum, total	M200.7 ICP	1	1.42		*	mg/L	0.03	0.2	07/01/14 12:31	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/28/14 4:30	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/27/14 23:22	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0110			mg/L	0.0002	0.001	06/28/14 4:30	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0108			mg/L	0.0002	0.001	06/27/14 23:22	msh
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	06/25/14 22:34	aeb
Barium, total	M200.7 ICP	1	0.040			mg/L	0.003	0.02	07/01/14 12:31	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/14 4:30	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	06/27/14 23:22	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/25/14 22:34	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/14 12:31	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	06/27/14 0:05	aeb
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/01/14 12:31	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:30	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/27/14 23:22	msh
Calcium, dissolved	M200.7 ICP	1	22.4		*	mg/L	0.1	0.5	06/25/14 22:34	aeb
Calcium, total	M200.7 ICP	1	22			mg/L	0.1	0.5	07/01/14 12:31	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	06/28/14 4:30	pmc
Chromium, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.002	06/27/14 23:22	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00055			mg/L	0.00005	0.0003	06/28/14 4:30	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00056			mg/L	0.00005	0.0003	06/27/14 23:22	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	06/28/14 4:30	pmc
Copper, total	M200.8 ICP-MS	1	0.0021	B		mg/L	0.0005	0.003	06/27/14 23:22	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/14 0:05	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 12:31	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	06/25/14 22:34	aeb
Iron, total	M200.7 ICP	1	1.22			mg/L	0.02	0.05	07/01/14 12:31	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:30	pmc
Lead, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0005	06/27/14 23:22	msh
Lithium, dissolved	M200.7 ICP	1	0.023	B		mg/L	0.008	0.04	06/25/14 22:34	aeb
Lithium, total	M200.7 ICP	1	0.027	B		mg/L	0.008	0.04	07/01/14 12:31	aeb
Magnesium, dissolved	M200.7 ICP	1	6.5			mg/L	0.2	1	06/25/14 22:34	aeb
Magnesium, total	M200.7 ICP	1	6.8			mg/L	0.2	1	07/01/14 12:31	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0068			mg/L	0.0005	0.003	06/28/14 4:30	pmc
Manganese, total	M200.8 ICP-MS	1	0.0357			mg/L	0.0005	0.003	06/27/14 23:22	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.2			ng/L	0.2	0.5	06/26/14 15:24	las
Mercury, total	M1631, Atomic Fluorescence	2	19.9			ng/L	0.4	1	06/26/14 16:22	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0067			mg/L	0.0005	0.003	06/28/14 4:30	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0064			mg/L	0.0005	0.003	06/27/14 23:22	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/28/14 4:30	pmc
Nickel, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0006	0.003	06/27/14 23:22	msh
Potassium, dissolved	M200.7 ICP	1	4.6			mg/L	0.2	1	06/25/14 22:34	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L19044-01***
Date Sampled: *06/19/14 12:30*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.9			mg/L	0.2	1	07/01/14 12:31	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/25/14 22:34	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 12:31	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	06/28/14 4:30	pmc
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	06/27/14 23:22	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/14 4:30	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/27/14 23:22	msh
Sodium, dissolved	M200.7 ICP	1	47.5		*	mg/L	0.2	1	06/25/14 22:34	aeb
Sodium, total	M200.7 ICP	1	47.3			mg/L	0.2	1	07/01/14 12:31	aeb
Strontium, dissolved	M200.7 ICP	1	0.113		*	mg/L	0.005	0.03	06/25/14 22:34	aeb
Strontium, total	M200.7 ICP	1	0.113			mg/L	0.005	0.03	07/01/14 12:31	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:30	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/27/14 23:22	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/14 4:30	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/27/14 23:22	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/25/14 22:34	aeb
Titanium, total	M200.7 ICP	1	0.061			mg/L	0.005	0.03	07/01/14 12:31	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	06/28/14 4:30	pmc
Uranium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	06/27/14 23:22	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0103			mg/L	0.0002	0.001	06/28/14 4:30	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0121			mg/L	0.0002	0.001	06/27/14 23:22	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/25/14 22:34	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 12:31	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: LESLIE GULCH

ACZ Sample ID: ***L19044-01***
Date Sampled: *06/19/14 12:30*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	98			mg/L	2	20	06/30/14 0:00	abd
Carbonate as CaCO3		1	8	B		mg/L	2	20	06/30/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	06/30/14 0:00	abd
Total Alkalinity		1	106			mg/L	2	20	06/30/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	13.7		*	mg/L	0.5	2.5	07/01/14 10:07	tcd
Conductivity @25C	SM2510B	1	365			umhos/cm	1	10	06/30/14 19:50	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 22:26	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	06/30/14 18:51	mpb
Fluoride	M300.0 - Ion Chromatography	1	2.21		*	mg/L	0.05	0.25	07/01/14 10:07	tcd
Hardness as CaCO3	SM2340B - Calculation		83			mg/L	0.8	4	07/08/14 11:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.20		*	mg/L	0.02	0.1	07/02/14 23:59	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 12:33	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	06/30/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	06/30/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/01/14 17:37	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	200			mg/L	10	20	06/25/14 15:44	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1	34		*	mg/L	5	20	04/26/14 13:31	eaa
Sulfate	M300.0 - Ion Chromatography	1	33.1			mg/L	0.5	2.5	07/02/14 21:25	tcd

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: OWYHEE RIVER DS

ACZ Sample ID: ***L19044-02***
Date Sampled: *06/19/14 15:45*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 12:57	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/01/14 16:14	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/01/14 10:38	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								06/26/14 21:31	las
Total Hot Plate Digestion	M200.2 ICP								06/30/14 17:13	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: OWYHEE RIVER DS

ACZ Sample ID: ***L19044-02***
Date Sampled: *06/19/14 15:45*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.09	B		mg/L	0.03	0.2	06/25/14 22:37	aeb
Aluminum, total	M200.7 ICP	1	0.54		*	mg/L	0.03	0.2	07/01/14 12:41	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/28/14 4:40	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/27/14 23:25	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0063			mg/L	0.0002	0.001	06/28/14 4:40	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0061			mg/L	0.0002	0.001	06/27/14 23:25	msh
Barium, dissolved	M200.7 ICP	1	0.016	B		mg/L	0.003	0.02	06/25/14 22:37	aeb
Barium, total	M200.7 ICP	1	0.021			mg/L	0.003	0.02	07/01/14 12:41	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/14 4:40	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/27/14 23:25	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/25/14 22:37	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/01/14 12:41	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	06/27/14 0:08	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/01/14 12:41	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:40	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/27/14 23:25	msh
Calcium, dissolved	M200.7 ICP	1	21.7		*	mg/L	0.1	0.5	06/25/14 22:37	aeb
Calcium, total	M200.7 ICP	1	21.6			mg/L	0.1	0.5	07/01/14 12:41	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/28/14 4:40	pmc
Chromium, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	06/27/14 23:25	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00066			mg/L	0.00005	0.0003	06/28/14 4:40	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00019	B		mg/L	0.00005	0.0003	06/27/14 23:25	msh
Copper, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	06/28/14 4:40	pmc
Copper, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.003	06/27/14 23:25	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/27/14 0:08	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 12:41	aeb
Iron, dissolved	M200.7 ICP	1	0.06			mg/L	0.02	0.05	06/25/14 22:37	aeb
Iron, total	M200.7 ICP	1	0.42			mg/L	0.02	0.05	07/01/14 12:41	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:40	pmc
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	06/27/14 23:25	msh
Lithium, dissolved	M200.7 ICP	1	0.014	B		mg/L	0.008	0.04	06/25/14 22:37	aeb
Lithium, total	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	07/01/14 12:41	aeb
Magnesium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	06/25/14 22:37	aeb
Magnesium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	07/01/14 12:41	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	06/28/14 4:40	pmc
Manganese, total	M200.8 ICP-MS	1	0.0070			mg/L	0.0005	0.003	06/27/14 23:25	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.2			ng/L	0.2	0.5	06/26/14 15:29	las
Mercury, total	M1631, Atomic Fluorescence	2	2.7			ng/L	0.4	1	06/26/14 16:27	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	06/28/14 4:40	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.003	06/27/14 23:25	msh
Nickel, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	06/28/14 4:40	pmc
Nickel, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0006	0.003	06/27/14 23:25	msh
Potassium, dissolved	M200.7 ICP	1	3.8			mg/L	0.2	1	06/25/14 22:37	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: OWYHEE RIVER DS

ACZ Sample ID: ***L19044-02***
Date Sampled: *06/19/14 15:45*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	3.8			mg/L	0.2	1	07/01/14 12:41	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/25/14 22:37	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 12:41	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	06/28/14 4:40	pmc
Selenium, total	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	06/27/14 23:25	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/28/14 4:40	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/27/14 23:25	msh
Sodium, dissolved	M200.7 ICP	1	34.5		*	mg/L	0.2	1	06/25/14 22:37	aeb
Sodium, total	M200.7 ICP	1	34.1			mg/L	0.2	1	07/01/14 12:41	aeb
Strontium, dissolved	M200.7 ICP	1	0.101		*	mg/L	0.005	0.03	06/25/14 22:37	aeb
Strontium, total	M200.7 ICP	1	0.103			mg/L	0.005	0.03	07/01/14 12:41	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/28/14 4:40	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/27/14 23:25	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/28/14 4:40	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/27/14 23:25	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/25/14 22:37	aeb
Titanium, total	M200.7 ICP	1	0.023	B		mg/L	0.005	0.03	07/01/14 12:41	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	06/28/14 4:40	pmc
Uranium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	06/27/14 23:25	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0048			mg/L	0.0002	0.001	06/28/14 4:40	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0055			mg/L	0.0002	0.001	06/27/14 23:25	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/25/14 22:37	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 12:41	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: OWYHEE RIVER DS

ACZ Sample ID: ***L19044-02***
Date Sampled: *06/19/14 15:45*
Date Received: *06/24/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	81			mg/L	2	20	06/30/14 0:00	abd
Carbonate as CaCO3		1	6	B		mg/L	2	20	06/30/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	06/30/14 0:00	abd
Total Alkalinity		1	87			mg/L	2	20	06/30/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	10.00		*	mg/L	0.5	2.5	07/01/14 10:25	tcd
Conductivity @25C	SM2510B	1	304			umhos/cm	1	10	06/30/14 19:58	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 22:27	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:35	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.49		*	mg/L	0.05	0.25	07/01/14 10:25	tcd
Hardness as CaCO3	SM2340B - Calculation		78			mg/L	0.8	4	07/08/14 11:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B	*	mg/L	0.02	0.1	07/03/14 0:01	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 12:34	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	06/30/14 0:00	abd
pH measured at		1	21			C	0.1	0.1	06/30/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/01/14 17:38	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	180			mg/L	10	20	06/25/14 15:46	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	04/26/14 13:33	eaa
Sulfate	M300.0 - Ion Chromatography	1	30.5			mg/L	0.5	2.5	07/02/14 22:01	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19044***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366783													
WG366783PBW1	PBW	06/30/14 16:45				U	mg/L		-20	20			
WG366783LCSW3	LCSW	06/30/14 17:03	WC140610-	820.0001		830.7	mg/L	101.3	90	110			
L19046-02DUP	DUP	06/30/14 20:43			167	167	mg/L				0	20	
WG366783LCSW6	LCSW	06/30/14 21:02	WC140610-	820.0001		848	mg/L	103.4	90	110			
WG366783PBW2	PBW	06/30/14 21:11				2.3	mg/L		-20	20			
WG366783LCSW9	LCSW	07/01/14 0:39	WC140610-	820.0001		848.3	mg/L	103.5	90	110			
WG366783PBW3	PBW	07/01/14 0:48				2.7	mg/L		-20	20			
WG366783LCSW12	LCSW	07/01/14 4:18	WC140610-	820.0001		831.1	mg/L	101.4	90	110			
WG366783PBW4	PBW	07/01/14 4:27				2.2	mg/L		-20	20			
WG366783LCSW15	LCSW	07/01/14 7:59	WC140610-	820.0001		823.2	mg/L	100.4	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.09	0.09			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	1.0011		1.095	mg/L	109.4	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	1.0011	1.62	2.622	mg/L	100.1	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	1.0011	1.62	2.664	mg/L	104.3	85	115	1.59	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		2	mg/L	100	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.09	0.09			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.066	0.066			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1.0011		1.082	mg/L	108.1	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1.0011	1.42	2.805	mg/L	138.3	70	130			M1
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1.0011	1.42	2.787	mg/L	136.5	70	130	0.64	20	M1

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.02002		.02046	mg/L	102.2	90	110			
WG366719ICB	ICB	06/28/14 3:57				.00046	mg/L		-0.0012	0.0012			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.01		.01032	mg/L	103.2	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.01	U	.00967	mg/L	96.7	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.01	U	.0101	mg/L	101	70	130	4.35	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.02002		.01945	mg/L	97.2	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0012	0.0012			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00088	0.00088			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.01		.01031	mg/L	103.1	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.01	U	.01038	mg/L	103.8	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.01	U	.0103	mg/L	103	70	130	0.77	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.0521	mg/L	104.2	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0006	0.0006			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.0501		.05069	mg/L	101.2	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.0501	.0011	.05256	mg/L	102.7	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.0501	.0011	.0521	mg/L	101.8	70	130	0.88	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05204	mg/L	104.1	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0006	0.0006			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00044	0.00044			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.0501		.05197	mg/L	103.7	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.0501	.0061	.05592	mg/L	99.4	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.0501	.0061	.05699	mg/L	101.6	70	130	1.9	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.0008	mg/L	100	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.009	0.009			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	.5		.509	mg/L	101.8	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	.5	.079	.5749	mg/L	99.2	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	.5	.079	.5743	mg/L	99.1	85	115	0.1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.9838	mg/L	99.2	95	105			
WG366836ICB	ICB	07/01/14 12:09				.0031	mg/L		-0.009	0.009			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.0066	0.0066			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	.5		.5101	mg/L	102	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	.5	.04	.5504	mg/L	102.1	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	.5	.04	.553	mg/L	102.6	70	130	0.47	20	

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ACZ Project ID: ***L19044***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.0484	mg/L	96.8	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.00015	0.00015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.04852	mg/L	96.9	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	U	.04609	mg/L	92.1	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	U	.04665	mg/L	93.2	70	130	1.21	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.04759	mg/L	95.2	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.00015	0.00015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00011	0.00011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04796	mg/L	95.8	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	U	.04725	mg/L	94.4	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	U	.04626	mg/L	92.4	70	130	2.12	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		1.988	mg/L	99.4	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.12	0.12			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	.999		1.009	mg/L	101	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	.999	U	1.024	mg/L	102.5	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	.999	U	1.023	mg/L	102.4	85	115	0.1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.985	mg/L	99.3	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.12	0.12			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.088	0.088			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	.999		1.019	mg/L	102	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	.999	U	1.037	mg/L	103.8	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	.999	U	1.046	mg/L	104.7	70	130	0.86	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366570													
WG366570ICV	ICV	06/26/14 23:04	II140512-2	2		2.016	mg/L	100.8	95	105			
WG366570ICB	ICB	06/26/14 23:11				U	mg/L		-0.03	0.03			
WG366570LFB	LFB	06/26/14 23:23	II140611-2	.5005		.507	mg/L	101.3	85	115			
L19036-04AS	AS	06/26/14 23:43	II140611-2	2.5025	U	2.603	mg/L	104	85	115			
L19036-04ASD	ASD	06/26/14 23:46	II140611-2	2.5025	U	2.611	mg/L	104.3	85	115	0.31	20	

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ACZ Project ID: ***L19044***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		2.02	mg/L	101	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.03	0.03			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.022	0.022			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	.5005		.515	mg/L	102.9	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	.5005	.17	.687	mg/L	103.3	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	.5005	.17	.686	mg/L	103.1	70	130	0.15	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.04944	mg/L	98.9	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.0501		.04885	mg/L	97.5	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.0501	U	.04581	mg/L	91.4	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.0501	U	.04683	mg/L	93.5	70	130	2.2	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05031	mg/L	100.6	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.0501		.0501	mg/L	100	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.0501	U	.04819	mg/L	96.2	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.0501	U	.04758	mg/L	95	70	130	1.27	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	100		100.41	mg/L	100.4	95	105			
WG366492ICB	ICB	06/25/14 21:16				.1	mg/L		-0.3	0.3			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	67.98099		73.39	mg/L	108	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	67.98099	924	945.4	mg/L	31.5	85	115			M3
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	67.98099	924	934.5	mg/L	15.4	85	115	1.16	20	M3

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	100		99.82	mg/L	99.8	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.3	0.3			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.22	0.22			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	67.98099		73.1	mg/L	107.5	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	67.98099	22	95.79	mg/L	108.5	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	67.98099	22	96.16	mg/L	109.1	70	130	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG366755													
WG366755LFB	LFB	06/30/14 13:36	WI140610-6	30		31.2	mg/L	104	90	110			
L18963-07DUP	DUP	06/30/14 18:23			41.9	42.1	mg/L				0.5	20	RA
L18963-08AS	AS	06/30/14 18:59	WI140610-6	30000	14500	45500	mg/L	103.3	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05016	mg/L	100.3	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0015	0.0015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05074	mg/L	101.4	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	U	.04691	mg/L	93.7	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	U	.04687	mg/L	93.6	70	130	0.09	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.04831	mg/L	96.6	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0015	0.0015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.0011	0.0011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04738	mg/L	94.7	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.0006	.04699	mg/L	92.7	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.0006	.04664	mg/L	92	70	130	0.75	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05021	mg/L	100.4	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.00015	0.00015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05163	mg/L	103.2	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	.00121	.0502	mg/L	97.9	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	.00121	.05094	mg/L	99.4	70	130	1.46	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.0488	mg/L	97.6	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.00015	0.00015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00011	0.00011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04991	mg/L	99.7	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.00019	.04934	mg/L	98.2	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.00019	.04831	mg/L	96.1	70	130	2.11	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366783													
WG366783LCSW2	LCSW	06/30/14 16:50	PCN44568	1408.8		1454.5	umhos/cm	103.2	90	110			
L19046-02DUP	DUP	06/30/14 20:43			950	947	umhos/cm				0.3	20	
WG366783LCSW5	LCSW	06/30/14 20:48	PCN44568	1408.8		1443.4	umhos/cm	102.5	90	110			
WG366783LCSW8	LCSW	07/01/14 0:25	PCN44568	1408.8		1439.3	umhos/cm	102.2	90	110			
WG366783LCSW11	LCSW	07/01/14 4:04	PCN44568	1408.8		1433.2	umhos/cm	101.7	90	110			
WG366783LCSW14	LCSW	07/01/14 7:45	PCN44568	1408.8		1422.1	umhos/cm	100.9	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.04878	mg/L	97.6	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0015	0.0015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05		.04854	mg/L	97.1	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05	.0009	.04167	mg/L	81.5	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05	.0009	.04118	mg/L	80.6	70	130	1.18	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.04792	mg/L	95.8	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0015	0.0015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.0011	0.0011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05		.04674	mg/L	93.5	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05	.001	.04551	mg/L	89	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05	.001	.04556	mg/L	89.1	70	130	0.11	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366995													
WG366995ICV	ICV	07/02/14 22:20	WI140702-5	.3		.289	mg/L	96.3	90	110			
WG366995ICB	ICB	07/02/14 22:21				U	mg/L		-0.003	0.003			
WG366949LRB	LRB	07/02/14 22:22				U	mg/L		-0.003	0.003			
WG366949LFB	LFB	07/02/14 22:23	WI140702-2	.2		.1977	mg/L	98.9	90	110			
L19044-01DUP	DUP	07/02/14 22:26			U	U	mg/L				0	20	RA
L19044-02LFM	LFM	07/02/14 22:28	WI140702-2	.2	U	.1972	mg/L	98.6	90	110			

SPF Water Engineering

ACZ Project ID: ***L19044***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366801													
WG366801ICV	ICV	06/30/14 17:57	WI140617-1	.3		.3018	mg/L	100.6	90	110			
WG366801ICB	ICB	06/30/14 17:58				U	mg/L		-0.003	0.003			
WG366802													
WG366758LRB	LRB	06/30/14 18:36				U	mg/L		-0.003	0.003			
WG366758LFB	LFB	06/30/14 18:37	WI140617-1	.2		.2004	mg/L	100.2	90	110			
L19038-04DUP	DUP	06/30/14 18:51			U	U	mg/L				0	20	RA
L19099-02LFM	LFM	06/30/14 19:00	WI140617-1	.2	U	.2016	mg/L	100.8	90	110			
WG366995													
WG366995ICV	ICV	07/02/14 22:20	WI140702-5	.3		.289	mg/L	96.3	90	110			
WG366995ICB	ICB	07/02/14 22:21				U	mg/L		-0.003	0.003			
WG366909													
WG366886LRB	LRB	07/02/14 23:33				U	mg/L		-0.003	0.003			
WG366886LFB	LFB	07/02/14 23:34	WI140617-1	.2		.2024	mg/L	101.2	90	110			
L19044-02DUP	DUP	07/02/14 23:36			U	U	mg/L				0	20	RA
L19067-01LFM	LFM	07/02/14 23:37	WI140617-1	.2	U	.2016	mg/L	100.8	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG366755													
WG366755LFB	LFB	06/30/14 13:36	WI140610-6	1.5		1.56	mg/L	104	90	110			
L18963-07DUP	DUP	06/30/14 18:23			.92	.92	mg/L				0	20	RA
L18963-08AS	AS	06/30/14 18:59	WI140610-6	1500	292	1860	mg/L	104.5	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366570													
WG366570ICV	ICV	06/26/14 23:04	II140512-2	2		2.03	mg/L	101.5	95	105			
WG366570ICB	ICB	06/26/14 23:11				U	mg/L		-0.3	0.3			
WG366570LFB	LFB	06/26/14 23:23	II140611-2	1.001		1.06	mg/L	105.9	85	115			
L19036-04AS	AS	06/26/14 23:43	II140611-2	5.005	U	5.26	mg/L	105.1	85	115			
L19036-04ASD	ASD	06/26/14 23:46	II140611-2	5.005	U	5.29	mg/L	105.7	85	115	0.57	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.3	0.3			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.22	0.22			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1.001		1.05	mg/L	104.9	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1.001	U	1.06	mg/L	105.9	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1.001	U	1.07	mg/L	106.9	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		1.998	mg/L	99.9	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.06	0.06			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	1.0014		1.037	mg/L	103.6	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	1.0014	.06	1.027	mg/L	97.6	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	1.0014	.06	1.024	mg/L	97.3	85	115	0.29	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		2.007	mg/L	100.4	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.06	0.06			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.044	0.044			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1.0014		1.032	mg/L	103.1	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1.0014	1.22	2.273	mg/L	105.2	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1.0014	1.22	2.294	mg/L	107.2	70	130	0.92	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05141	mg/L	102.8	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05056	mg/L	101	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	U	.05093	mg/L	101.8	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	U	.05128	mg/L	102.5	70	130	0.68	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05	mg/L	100	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04767	mg/L	95.2	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.0002	.04745	mg/L	94.4	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.0002	.04799	mg/L	95.5	70	130	1.13	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.0108	mg/L	100.5	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.024	0.024			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	1.002		1.005	mg/L	100.3	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	1.002	.148	1.156	mg/L	100.6	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	1.002	.148	1.158	mg/L	100.8	85	115	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.9972	mg/L	99.9	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.024	0.024			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.0176	0.0176			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1.002		1.023	mg/L	102.1	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1.002	.027	1.042	mg/L	101.3	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1.002	.027	1.045	mg/L	101.6	70	130	0.29	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	100		97.29	mg/L	97.3	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.6	0.6			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	50.00131		50.22	mg/L	100.4	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	50.00131	81.3	126.8	mg/L	91	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	50.00131	81.3	126.7	mg/L	90.8	85	115	0.08	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	100		96.98	mg/L	97	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.6	0.6			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.44	0.44			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	50.00131		50.11	mg/L	100.2	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	50.00131	6.8	57.28	mg/L	101	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	50.00131	6.8	57.55	mg/L	101.5	70	130	0.47	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05224	mg/L	104.5	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0015	0.0015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.0501		.05146	mg/L	102.7	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.0501	.3949	.4391	mg/L	88.2	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.0501	.3949	.4429	mg/L	95.8	70	130	0.86	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05168	mg/L	103.4	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0015	0.0015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.0011	0.0011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.0501		.04948	mg/L	98.8	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.0501	.007	.05656	mg/L	98.9	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.0501	.007	.05645	mg/L	98.7	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366551													
WG366551CCV	CCV	06/26/14 14:34	HG140624-4	10		9.87	ng/L	98.7	76.5	123.4			
WG366551CCB	CCB	06/26/14 14:39				U	ng/L		-0.5	0.5			
WG366551PQV	PQV	06/26/14 14:44	HG140624-6	.5		.52	ng/L	104	70	130			
WG366551LFB	LFB	06/26/14 14:49	HG140624-5	2		1.93	ng/L	96.5	71	125			
L18942-01MS	MS	06/26/14 14:59	HG140624-5	2	U	1.98	ng/L	99	71	125			
L18942-01MSD	MSD	06/26/14 15:04	HG140624-5	2	U	1.96	ng/L	98	71	125	1.02	24	
WG366551CCV1	CCV	06/26/14 15:34	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366551CCB1	CCB	06/26/14 15:39				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366605													
WG366605CCV	CCV	06/26/14 15:34	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366605CCB	CCB	06/26/14 15:39				U	ng/L		-0.5	0.5			
WG366605PQV	PQV	06/26/14 15:46	HG140624-6	.5		.52	ng/L	104	70	130			
WG366605LFB	LFB	06/26/14 15:51	HG140624-5	2		1.99	ng/L	99.5	71	125			
L19008-01MS	MS	06/26/14 16:01	HG140624-5	2	.2	2.2	ng/L	100	71	125			
L19008-01MSD	MSD	06/26/14 16:06	HG140624-5	2	.2	2.21	ng/L	100.5	71	125	0.45	24	
WG366605CCV1	CCV	06/26/14 16:32	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366605CCB1	CCB	06/26/14 16:37				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.01998		.01867	mg/L	93.4	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0015	0.0015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.0502		.04958	mg/L	98.8	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.0502	.045	.09547	mg/L	100.5	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.0502	.045	.09729	mg/L	104.2	70	130	1.89	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.01998		.01822	mg/L	91.2	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0015	0.0015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.0011	0.0011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.0502		.04637	mg/L	92.4	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.0502	.0042	.05059	mg/L	92.4	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.0502	.0042	.05034	mg/L	91.9	70	130	0.5	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05024	mg/L	100.5	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0018	0.0018			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05		.0501	mg/L	100.2	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05	.0018	.04443	mg/L	85.3	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05	.0018	.04394	mg/L	84.3	70	130	1.11	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.04952	mg/L	99	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0018	0.0018			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00132	0.00132			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05		.04784	mg/L	95.7	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05	.0008	.04632	mg/L	91	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05	.0008	.04633	mg/L	91.1	70	130	0.02	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366994													
WG366994ICV	ICV	07/02/14 21:46	WI140417-3	2.416		2.361	mg/L	97.7	90	110			
WG366994ICB	ICB	07/02/14 21:48				U	mg/L		-0.06	0.06			
WG366998													
WG366998LFB1	LFB	07/02/14 23:24	WI140215-3	2		1.983	mg/L	99.2	90	110			
WG366998LFB2	LFB	07/02/14 23:58	WI140215-3	2		2.024	mg/L	101.2	90	110			
L19044-01AS	AS	07/03/14 0:00	WI140215-3	2	.2	2.207	mg/L	100.4	90	110			
L19044-02DUP	DUP	07/03/14 0:02			.06	.058	mg/L				3.4	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366944LFB1	LFB	07/02/14 12:07	WI140113-8	1		.984	mg/L	98.4	90	110			
L19035-05AS	AS	07/02/14 12:24	WI140113-8	1	U	1.03	mg/L	103	90	110			
L19035-06DUP	DUP	07/02/14 12:26			.06	.08	mg/L				28.6	20	RA
WG366944LFB2	LFB	07/02/14 12:38	WI140113-8	1		.991	mg/L	99.1	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366783													
WG366783LCSW1	LCSW	06/30/14 16:48	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
L19046-02DUP	DUP	06/30/14 20:43			8.2	8.16	units				0.5	20	
WG366783LCSW4	LCSW	06/30/14 20:46	PCN45265	5.99		6.09	units	101.7	5.89	6.09			
WG366783LCSW7	LCSW	07/01/14 0:23	PCN45265	5.99		6.09	units	101.7	5.89	6.09			
WG366783LCSW10	LCSW	07/01/14 4:02	PCN45265	5.99		6.09	units	101.7	5.89	6.09			
WG366783LCSW13	LCSW	07/01/14 7:44	PCN45265	5.99		6.09	units	101.7	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19044***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366873													
WG366873ICV	ICV	07/01/14 15:57	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG366873ICB	ICB	07/01/14 15:58				.011	mg/L		-0.03	0.03			
WG366894													
WG366843LRB	LRB	07/01/14 17:29				.011	mg/L		-0.03	0.03			
WG366843LFB	LFB	07/01/14 17:30	WI140701-2	.5		.498	mg/L	99.6	90	110			
L18897-01LFM	LFM	07/01/14 17:32	WI140701-2	.5	.01	.486	mg/L	95.2	90	110			
L19035-07DUP	DUP	07/01/14 17:34			.01	.012	mg/L				18.2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	20		19.92	mg/L	99.6	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.6	0.6			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	99.99364		101.9	mg/L	101.9	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	99.99364	13.5	116.8	mg/L	103.3	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	99.99364	13.5	116.9	mg/L	103.4	85	115	0.09	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	20		19.76	mg/L	98.8	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.6	0.6			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.44	0.44			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	99.99364		101.2	mg/L	101.2	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	99.99364	4.9	106.9	mg/L	102	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	99.99364	4.9	107.4	mg/L	102.5	70	130	0.47	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366515													
WG366515PBW	PBW	06/25/14 15:15				U	mg/L		-20	20			
WG366515LCSW	LCSW	06/25/14 15:16	PCN46083	260		246	mg/L	94.6	80	120			
L19048-04DUP	DUP	06/25/14 15:55			160	158	mg/L				1.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366584													
WG366584PBW	PBW	04/26/14 12:55				U	mg/L		-6	6			
WG366584LCSW	LCSW	04/26/14 12:56	PCN46084	160		151	mg/L	94.4	80	120			
L19044-02DUP	DUP	04/26/14 13:34			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L19044***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.05	mg/L	102.5	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.3	0.3			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	1.0009	U	1.04	mg/L	103.9	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	1.0009	U	1.04	mg/L	103.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		2.02	mg/L	101	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.3	0.3			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.22	0.22			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1.0009		1.08	mg/L	107.9	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1.0009	U	1.08	mg/L	107.9	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1.0009	U	1.09	mg/L	108.9	70	130	0.92	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05152	mg/L	103	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05006	mg/L	100	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	.0002	.05208	mg/L	103.7	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	.0002	.05231	mg/L	104.1	70	130	0.44	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05196	mg/L	103.9	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.05222	mg/L	104.3	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.0003	.04934	mg/L	98	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.0003	.04922	mg/L	97.7	70	130	0.24	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.02002		.02002	mg/L	100	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.00015	0.00015			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.01002		.009868	mg/L	98.5	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.01002	U	.007203	mg/L	71.9	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.01002	U	.008316	mg/L	83	70	130	14.34	20	

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ACZ Project ID: ***L19044***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.02002		.01957	mg/L	97.8	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.00015	0.00015			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00011	0.00011			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.01002		.009514	mg/L	95	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.01002	U	.009107	mg/L	90.9	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.01002	U	.00912	mg/L	91	70	130	0.14	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	100		99.61	mg/L	99.6	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.6	0.6			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	100.0393		102.3	mg/L	102.3	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	100.0393	375	456	mg/L	81	85	115			M3
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	100.0393	375	466	mg/L	91	85	115	2.17	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	100		98.61	mg/L	98.6	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.6	0.6			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.44	0.44			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	100.0393		101.4	mg/L	101.4	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	100.0393	47.3	149.2	mg/L	101.9	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	100.0393	47.3	149.9	mg/L	102.6	70	130	0.47	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.0092	mg/L	100.5	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.015	0.015			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	.5005		.5176	mg/L	103.4	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	.5005	2.38	2.783	mg/L	80.5	85	115			M3
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	.5005	2.38	2.791	mg/L	82.1	85	115	0.29	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366836ICB	ICB	07/01/14 12:09				.005	mg/L		-0.015	0.015			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.011	0.011			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	.5005		.5149	mg/L	102.9	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	.5005	.113	.6277	mg/L	102.8	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	.5005	.113	.63	mg/L	103.3	70	130	0.37	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG366969													
WG366969LFB1	LFB	07/02/14 19:56	WI140610-6	30		31.5	mg/L	105	90	110			
L19044-01DUP	DUP	07/02/14 21:43			33.1	33.4	mg/L				0.9	20	
L19044-02AS	AS	07/02/14 22:19	WI140610-6	30	30.5	60.9	mg/L	101.3	90	110			
WG366969LFB2	LFB	07/03/14 12:32	WI140610-6	30		30.4	mg/L	101.3	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05343	mg/L	106.9	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.0502		.05194	mg/L	103.5	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.0502	U	.05345	mg/L	106.5	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.0502	U	.05356	mg/L	106.7	70	130	0.21	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05487	mg/L	109.7	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.0502		.05029	mg/L	100.2	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.0502	U	.05001	mg/L	99.6	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.0502	U	.05043	mg/L	100.5	70	130	0.84	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.0501		.0521	mg/L	104	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05181	mg/L	103.5	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	U	.04884	mg/L	97.6	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	U	.05031	mg/L	100.5	70	130	2.97	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.0501		.04795	mg/L	95.7	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04852	mg/L	96.9	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	U	.04758	mg/L	95.1	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	U	.04696	mg/L	93.8	70	130	1.31	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.0295	mg/L	101.5	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.015	0.015			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	1		1.037	mg/L	103.7	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	1		.9919	mg/L	99.2	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	1		.9878	mg/L	98.8	85	115	0.41	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.9998	mg/L	100	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.015	0.015			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.011	0.011			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	1		1.036	mg/L	103.6	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	1	.061	1.096	mg/L	103.5	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	1	.061	1.103	mg/L	104.2	70	130	0.64	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05106	mg/L	102.1	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0003	0.0003			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05058	mg/L	101.1	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	.0106	.06306	mg/L	104.8	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	.0106	.06252	mg/L	103.7	70	130	0.86	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.05218	mg/L	104.4	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0003	0.0003			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00022	0.00022			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.0487	mg/L	97.3	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.0017	.0523	mg/L	101.1	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.0017	.0527	mg/L	101.9	70	130	0.76	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366719													
WG366719ICV	ICV	06/28/14 3:54	MS140513-1	.05		.05013	mg/L	100.3	90	110			
WG366719ICB	ICB	06/28/14 3:57				U	mg/L		-0.0006	0.0006			
WG366719LFB	LFB	06/28/14 4:00	MS140625-3	.05005		.05248	mg/L	104.9	85	115			
L18903-03AS	AS	06/28/14 4:14	MS140625-3	.05005	.003	.05411	mg/L	102.1	70	130			
L18903-03ASD	ASD	06/28/14 4:17	MS140625-3	.05005	.003	.05367	mg/L	101.2	70	130	0.82	20	

SPF Water Engineering

ACZ Project ID: ***L19044***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366706													
WG366706ICV	ICV	06/27/14 21:57	MS140513-1	.05		.04852	mg/L	97	90	110			
WG366706ICB	ICB	06/27/14 22:01				U	mg/L		-0.0006	0.0006			
WG366618LRB	LRB	06/27/14 22:04				U	mg/L		-0.00044	0.00044			
WG366618LFB	LFB	06/27/14 22:07	MS140625-3	.05005		.04905	mg/L	98	85	115			
L19044-02LFM	LFM	06/27/14 23:28	MS140625-3	.05005	.0055	.05463	mg/L	98.2	70	130			
L19044-02LFMD	LFMD	06/27/14 23:32	MS140625-3	.05005	.0055	.05435	mg/L	97.6	70	130	0.51	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366492													
WG366492ICV	ICV	06/25/14 21:10	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366492ICB	ICB	06/25/14 21:16				U	mg/L		-0.03	0.03			
WG366492LFB	LFB	06/25/14 21:29	II140611-2	.5005		.529	mg/L	105.7	85	115			
L19036-05AS	AS	06/25/14 22:20	II140611-2	.5005	.27	.775	mg/L	100.9	85	115			
L19036-05ASD	ASD	06/25/14 22:24	II140611-2	.5005	.27	.777	mg/L	101.3	85	115	0.26	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366836													
WG366836ICV	ICV	07/01/14 12:03	II140624-2	2		1.933	mg/L	96.7	95	105			
WG366836ICB	ICB	07/01/14 12:09				U	mg/L		-0.03	0.03			
WG366774LRB	LRB	07/01/14 12:22				U	mg/L		-0.022	0.022			
WG366774LFB	LFB	07/01/14 12:25	II140611-2	.5005		.523	mg/L	104.5	85	115			
L19044-01LFM	LFM	07/01/14 12:35	II140611-2	.5005	U	.529	mg/L	105.7	70	130			
L19044-01LFMD	LFMD	07/01/14 12:38	II140611-2	.5005	U	.534	mg/L	106.7	70	130	0.94	20	

SPF Water Engineering ACZ Project ID: ***L19044***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19044-01	WG366836	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366492	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366755	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366802	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366755	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366998	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366944	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366894	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366584	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19044***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19044-02	WG366836	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366492	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366755	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366909	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366755	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366998	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366944	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366894	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366584	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19044
Date Received: 06/24/2014 09:38
Received By: mtb
Date Printed: 6/24/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19884	1.8	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L19044

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 2nd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Leslie Gulch	6/19/14 12:30	SW	8	X							
Owyhee River DS	6/19/14 15:45	SW	8	X							

Matrix: (SW (Surface Water)) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/23/14 9:00	NPC	6/24/14 0930

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

19044 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19105

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 26, 2014. This project has been assigned to ACZ's project number, L19105. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19105. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 11, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19105

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 miscellaneous samples from SPF Water Engineering on June 26, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19105. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19105. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: POISON SPRING

ACZ Sample ID: ***L19105-01***
Date Sampled: *06/24/14 09:40*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 16:40	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 11:19	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 10:19	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 9:31	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: POISON SPRING

ACZ Sample ID: ***L19105-01***
Date Sampled: *06/24/14 09:40*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:10	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:10	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/30/14 23:03	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:01	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0348			mg/L	0.0002	0.001	06/30/14 23:03	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0350			mg/L	0.0002	0.001	07/09/14 18:01	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	06/30/14 22:10	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/14 14:10	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/30/14 23:03	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:01	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:10	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:10	jjc
Boron, dissolved	M200.7 ICP	1	0.13			mg/L	0.01	0.05	06/30/14 22:10	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/03/14 14:10	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:03	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:01	pmc
Calcium, dissolved	M200.7 ICP	1	1.1			mg/L	0.1	0.5	06/30/14 22:10	jjc
Calcium, total	M200.7 ICP	1	1.1			mg/L	0.1	0.5	07/03/14 14:10	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/30/14 23:03	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/09/14 18:01	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	06/30/14 23:03	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:01	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/30/14 23:03	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:11	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:10	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:10	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:10	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:10	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:03	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:01	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	06/30/14 22:10	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	07/03/14 14:10	jjc
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/30/14 22:10	jjc
Magnesium, total	M200.7 ICP	1	0.2	B		mg/L	0.2	1	07/03/14 14:10	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.003	06/30/14 23:03	pmc
Manganese, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	07/09/14 18:01	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 13:58	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 10:40	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0168			mg/L	0.0005	0.003	06/30/14 23:03	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0154			mg/L	0.0005	0.003	07/09/14 18:01	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/30/14 23:03	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:01	pmc
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.2	1	06/30/14 22:10	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: POISON SPRING

ACZ Sample ID: ***L19105-01***
Date Sampled: *06/24/14 09:40*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	1	5.7			mg/L	0.2	1	07/03/14 14:10	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:10	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:10	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	06/30/14 23:03	pmc
Selenium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0003	07/09/14 18:01	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	06/30/14 23:03	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:01	pmc
Sodium, dissolved	M200.7 ICP	1	108			mg/L	0.2	1	06/30/14 22:10	jjc
Sodium, total	M200.7 ICP	1	108			mg/L	0.2	1	07/03/14 14:10	jjc
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:10	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:10	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:03	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:01	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/30/14 23:03	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:01	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:10	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:10	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:03	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:01	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0002	0.001	06/30/14 23:03	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/09/14 18:01	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:10	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:10	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: POISON SPRING

ACZ Sample ID: ***L19105-01***
Date Sampled: *06/24/14 09:40*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	101			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	41			mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	142		*	mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	9.06		*	mg/L	0.5	2.5	07/07/14 21:46	jlf
Conductivity @25C	SM2510B	1	501		*	umhos/cm	1	10	07/02/14 2:31	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:10	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:09	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.72		*	mg/L	0.05	0.25	07/07/14 21:46	jlf
Hardness as CaCO3	SM2340B - Calculation		2.8	B		mg/L	0.8	4	07/11/14 11:50	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:13	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.06	B	*	mg/L	0.05	0.2	07/02/14 15:56	bsu
pH (lab)	SM4500H+ B									
pH		1	9.2	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/09/14 0:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	340			mg/L	10	20	06/27/14 14:30	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 8:59	nml
Sulfate	M300.0 - Ion Chromatography	1	59.0			mg/L	0.5	2.5	07/07/14 21:46	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L19105-02***
Date Sampled: *06/23/14 15:20*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 16:49	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 11:38	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 10:54	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 9:42	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L19105-02***
Date Sampled: *06/23/14 15:20*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.17	B		mg/L	0.03	0.2	06/30/14 22:13	jjc
Aluminum, total	M200.7 ICP	1	1.73			mg/L	0.03	0.2	07/03/14 14:19	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	06/30/14 23:19	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:05	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0063			mg/L	0.0002	0.001	06/30/14 23:19	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0064			mg/L	0.0002	0.001	07/09/14 18:05	pmc
Barium, dissolved	M200.7 ICP	1	0.014	B		mg/L	0.003	0.02	06/30/14 22:13	jjc
Barium, total	M200.7 ICP	1	0.021			mg/L	0.003	0.02	07/03/14 14:19	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/30/14 23:19	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	07/09/14 18:05	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:13	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:19	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	06/30/14 22:13	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/03/14 14:19	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:19	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:05	pmc
Calcium, dissolved	M200.7 ICP	1	20.1			mg/L	0.1	0.5	06/30/14 22:13	jjc
Calcium, total	M200.7 ICP	1	20.7			mg/L	0.1	0.5	07/03/14 14:19	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/30/14 23:19	pmc
Chromium, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.002	07/09/14 18:05	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00113			mg/L	0.00005	0.0003	06/30/14 23:19	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00048			mg/L	0.00005	0.0003	07/09/14 18:05	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.003	06/30/14 23:19	pmc
Copper, total	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	07/10/14 19:14	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:13	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:19	jjc
Iron, dissolved	M200.7 ICP	1	0.17			mg/L	0.02	0.05	06/30/14 22:13	jjc
Iron, total	M200.7 ICP	1	1.45			mg/L	0.02	0.05	07/03/14 14:19	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	06/30/14 23:19	pmc
Lead, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	07/09/14 18:05	pmc
Lithium, dissolved	M200.7 ICP	1	0.016	B		mg/L	0.008	0.04	06/30/14 22:13	jjc
Lithium, total	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	07/03/14 14:19	jjc
Magnesium, dissolved	M200.7 ICP	1	5.3			mg/L	0.2	1	06/30/14 22:13	jjc
Magnesium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	07/03/14 14:19	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	06/30/14 23:19	pmc
Manganese, total	M200.8 ICP-MS	1	0.0308			mg/L	0.0005	0.003	07/09/14 18:05	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	2.4			ng/L	0.2	0.5	07/01/14 14:03	las
Mercury, total	M1631, Atomic Fluorescence	2	5.1			ng/L	0.4	1	07/01/14 10:45	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	06/30/14 23:19	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0005	0.003	07/09/14 18:05	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	06/30/14 23:19	pmc
Nickel, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0006	0.003	07/09/14 18:05	pmc
Potassium, dissolved	M200.7 ICP	1	3.7			mg/L	0.2	1	06/30/14 22:13	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L19105-02***
Date Sampled: *06/23/14 15:20*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	1	3.8			mg/L	0.2	1	07/03/14 14:19	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:13	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:19	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	06/30/14 23:19	pmc
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/09/14 18:05	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	06/30/14 23:19	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:05	pmc
Sodium, dissolved	M200.7 ICP	1	31.4			mg/L	0.2	1	06/30/14 22:13	jjc
Sodium, total	M200.7 ICP	1	31.8			mg/L	0.2	1	07/03/14 14:19	jjc
Strontium, dissolved	M200.7 ICP	1	0.093			mg/L	0.005	0.03	06/30/14 22:13	jjc
Strontium, total	M200.7 ICP	1	0.095			mg/L	0.005	0.03	07/03/14 14:19	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:19	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:05	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/30/14 23:19	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:05	pmc
Titanium, dissolved	M200.7 ICP	1	0.007	B		mg/L	0.005	0.03	06/30/14 22:13	jjc
Titanium, total	M200.7 ICP	1	0.084			mg/L	0.005	0.03	07/03/14 14:19	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0005	06/30/14 23:19	pmc
Uranium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0005	07/09/14 18:05	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0067			mg/L	0.0002	0.001	06/30/14 23:19	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0087			mg/L	0.0002	0.001	07/09/14 18:05	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:13	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:19	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: DRY CREEK ARM

ACZ Sample ID: ***L19105-02***
Date Sampled: *06/23/14 15:20*
Date Received: *06/26/14*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	89			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	4	B		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	92		*	mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	9.40		*	mg/L	0.5	2.5	07/07/14 22:04	jlf
Conductivity @25C	SM2510B	1	287		*	umhos/cm	1	10	07/02/14 2:41	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:11	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:11	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.42		*	mg/L	0.05	0.25	07/07/14 22:04	jlf
Hardness as CaCO3	SM2340B - Calculation		72			mg/L	0.8	4	07/11/14 11:50	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:15	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 15:57	bsu
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/09/14 0:17	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	180			mg/L	10	20	06/30/14 11:24	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1	9	B	*	mg/L	5	20	06/30/14 15:17	eaa
Sulfate	M300.0 - Ion Chromatography	1	29.4			mg/L	0.5	2.5	07/07/14 22:04	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L19105-03***
Date Sampled: *06/23/14 16:50*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 16:57	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/01/14 17:55	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 9:53	las
Total Hot Plate Digestion	M200.2 ICP								07/01/14 20:13	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L19105-03***
Date Sampled: *06/23/14 16:50*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:16	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 12:39	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	06/30/14 23:22	pmc
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	07/09/14 18:08	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0276			mg/L	0.0002	0.001	06/30/14 23:22	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0268			mg/L	0.0002	0.001	07/09/14 18:08	pmc
Barium, dissolved	M200.7 ICP	1	0.067			mg/L	0.003	0.02	06/30/14 22:16	jjc
Barium, total	M200.7 ICP	1	0.072			mg/L	0.003	0.02	07/03/14 12:39	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/30/14 23:22	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:08	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:16	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 12:39	aeb
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	06/30/14 22:16	jjc
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	07/03/14 12:39	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:22	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:08	pmc
Calcium, dissolved	M200.7 ICP	1	33.3			mg/L	0.1	0.5	06/30/14 22:16	jjc
Calcium, total	M200.7 ICP	1	34.9			mg/L	0.1	0.5	07/03/14 12:39	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/30/14 23:22	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/09/14 18:08	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00081			mg/L	0.00005	0.0003	06/30/14 23:22	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/09/14 18:08	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/30/14 23:22	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:16	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:16	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 12:39	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:16	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/03/14 12:39	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:22	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:08	pmc
Lithium, dissolved	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	06/30/14 22:16	jjc
Lithium, total	M200.7 ICP	1	0.025	B		mg/L	0.008	0.04	07/03/14 12:39	aeb
Magnesium, dissolved	M200.7 ICP	1	8.6			mg/L	0.2	1	06/30/14 22:16	jjc
Magnesium, total	M200.7 ICP	1	9.1			mg/L	0.2	1	07/03/14 12:39	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.003	06/30/14 23:22	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:08	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/01/14 14:08	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/01/14 10:50	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	06/30/14 23:22	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0033			mg/L	0.0005	0.003	07/09/14 18:08	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/30/14 23:22	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:08	pmc
Potassium, dissolved	M200.7 ICP	1	4.3			mg/L	0.2	1	06/30/14 22:16	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L19105-03***
Date Sampled: *06/23/14 16:50*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.4			mg/L	0.2	1	07/03/14 12:39	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:16	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 12:39	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0013			mg/L	0.0001	0.0003	06/30/14 23:22	pmc
Selenium, total	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	07/09/14 18:08	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	06/30/14 23:22	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:08	pmc
Sodium, dissolved	M200.7 ICP	1	38.3			mg/L	0.2	1	06/30/14 22:16	jjc
Sodium, total	M200.7 ICP	1	39.8			mg/L	0.2	1	07/03/14 12:39	aeb
Strontium, dissolved	M200.7 ICP	1	0.234			mg/L	0.005	0.03	06/30/14 22:16	jjc
Strontium, total	M200.7 ICP	1	0.244			mg/L	0.005	0.03	07/03/14 12:39	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:22	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:08	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/30/14 23:22	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:08	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:16	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 12:39	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	06/30/14 23:22	pmc
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	07/09/14 18:08	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0305			mg/L	0.0002	0.001	06/30/14 23:22	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0308			mg/L	0.0002	0.001	07/09/14 18:08	pmc
Zinc, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	06/30/14 22:16	jjc
Zinc, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/03/14 12:39	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L19105-03***
Date Sampled: *06/23/14 16:50*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	125			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	125		*	mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	13.4		*	mg/L	0.5	2.5	07/07/14 22:22	jlf
Conductivity @25C	SM2510B	1	408		*	umhos/cm	1	10	07/02/14 2:50	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:11	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U		mg/L	0.003	0.01	07/02/14 23:49	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.44		*	mg/L	0.05	0.25	07/07/14 22:22	jlf
Hardness as CaCO3	SM2340B - Calculation		119			mg/L	0.8	4	07/11/14 11:50	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:39	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 15:58	bsu
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 0:18	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	06/27/14 10:54	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:19	eaa
Sulfate	M300.0 - Ion Chromatography	1	36.9			mg/L	0.5	2.5	07/07/14 22:22	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L19105-04***
Date Sampled: *06/24/14 13:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 17:14	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/01/14 18:09	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 10:25	las
Total Hot Plate Digestion	M200.2 ICP								07/01/14 20:25	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L19105-04***
Date Sampled: *06/24/14 13:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:19	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 12:43	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	06/30/14 23:26	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:18	pmc
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	06/30/14 23:26	pmc
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/09/14 18:18	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	06/30/14 22:19	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/14 12:43	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/30/14 23:26	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:18	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:19	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 12:43	aeb
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:19	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 12:43	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:26	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:18	pmc
Calcium, dissolved	M200.7 ICP	1		U		mg/L	0.1	0.5	06/30/14 22:19	jjc
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	07/03/14 12:43	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	06/30/14 23:26	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/09/14 18:18	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	06/30/14 23:26	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:18	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/30/14 23:26	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:24	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:19	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 12:43	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:19	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/03/14 12:43	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:26	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:18	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	06/30/14 22:19	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	07/03/14 12:43	aeb
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/30/14 22:19	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 12:43	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/30/14 23:26	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:18	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/01/14 14:13	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 10:55	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	06/30/14 23:26	pmc
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:18	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	06/30/14 23:26	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:18	pmc
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/30/14 22:19	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L19105-04***
Date Sampled: *06/24/14 13:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 12:43	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:19	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 12:43	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	06/30/14 23:26	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/09/14 18:18	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	06/30/14 23:26	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:18	pmc
Sodium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/30/14 22:19	jjc
Sodium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 12:43	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:19	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 12:43	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:26	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:18	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	06/30/14 23:26	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:18	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:19	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 12:43	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	06/30/14 23:26	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:18	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	06/30/14 23:26	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	07/09/14 18:18	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:19	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 12:43	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L19105-04***
Date Sampled: *06/24/14 13:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	07/07/14 22:40	jlf
Conductivity @25C	SM2510B	1	1	B	*	umhos/cm	1	10	07/02/14 2:57	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:13	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U		mg/L	0.003	0.01	07/02/14 23:51	pjb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.05	0.25	07/07/14 22:40	jlf
Hardness as CaCO3	SM2340B - Calculation			U		mg/L	0.8	4	07/11/14 11:51	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:41	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 15:59	bsu
pH (lab)	SM4500H+ B									
pH		1	6.2	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	07/09/14 0:19	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		U		mg/L	10	20	06/27/14 10:56	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 9:01	nml
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	07/07/14 22:40	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19105***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884PBW1	PBW	07/01/14 19:03				U	mg/L		-20	20			
WG366884LCSW3	LCSW	07/01/14 19:22	WC140630-	820.0001		841.6	mg/L	102.6	90	110			
WG366884LCSW6	LCSW	07/01/14 23:36	WC140630-	820.0001		826.8	mg/L	100.8	90	110			
WG366884PBW2	PBW	07/01/14 23:44				U	mg/L		-20	20			
L19101-01DUP	DUP	07/02/14 1:50			U	U	mg/L				0	20	RA
WG366884LCSW9	LCSW	07/02/14 3:26	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW3	PBW	07/02/14 3:35				U	mg/L		-20	20			
WG366884LCSW12	LCSW	07/02/14 7:22	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW4	PBW	07/02/14 7:31				2.1	mg/L		-20	20			
WG366884LCSW15	LCSW	07/02/14 11:01	WC140630-	820.0001		831.9	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.09	0.09			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0011		1.101	mg/L	110	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1.0011	U	1.148	mg/L	114.7	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1.0011	U	1.141	mg/L	114	85	115	0.61	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0011	U	1.091	mg/L	109	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0011	U	1.093	mg/L	109.2	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.989	mg/L	99.5	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.09	0.09			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.066	0.066			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1.0011		1.123	mg/L	112.2	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1.0011	.03	1.136	mg/L	110.5	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1.0011	.03	1.134	mg/L	110.3	70	130	0.18	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.09	0.09			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.066	0.066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0011		1.09	mg/L	108.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0011	U	1.099	mg/L	109.8	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0011	U	1.084	mg/L	108.3	70	130	1.37	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.02002		.02046	mg/L	102.2	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0012	0.0012			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.01		.01018	mg/L	101.8	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.01	U	.00975	mg/L	97.5	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.01	U	.01004	mg/L	100.4	70	130	2.93	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.02002		.02018	mg/L	100.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0012	0.0012			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00088	0.00088			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.01		.01083	mg/L	108.3	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.01	.0004	.01131	mg/L	109.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.01	.0004	.01124	mg/L	108.4	70	130	0.62	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05406	mg/L	108.1	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0006	0.0006			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.0501		.04938	mg/L	98.6	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.0501	.0348	.08717	mg/L	104.5	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.0501	.0348	.08687	mg/L	103.9	70	130	0.34	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05318	mg/L	106.4	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0006	0.0006			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00044	0.00044			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.05519	mg/L	110.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	.0268	.07832	mg/L	102.8	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	.0268	.07833	mg/L	102.9	70	130	0.01	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9683	mg/L	98.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.009	0.009			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5		.5041	mg/L	100.8	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	.5	.059	.5626	mg/L	100.7	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	.5	.059	.5682	mg/L	101.8	85	115	0.99	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5	.005	.5081	mg/L	100.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5	.005	.5103	mg/L	101.1	85	115	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.9735	mg/L	98.7	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.009	0.009			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.0066	0.0066			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	.5		.5089	mg/L	101.8	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	.5	.313	.8203	mg/L	101.5	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	.5	.313	.8187	mg/L	101.1	70	130	0.2	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.976	mg/L	98.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.009	0.009			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0066	0.0066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5		.5114	mg/L	102.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5	U	.5147	mg/L	102.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5	U	.511	mg/L	102.2	70	130	0.72	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.04797	mg/L	95.9	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.00015	0.00015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.04803	mg/L	96	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.05188	mg/L	103.7	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.05319	mg/L	106.3	70	130	2.49	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05115	mg/L	102.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05167	mg/L	103.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.05111	mg/L	102.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.05162	mg/L	103.1	70	130	0.99	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.007	mg/L	100.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.12	0.12			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.999		1.044	mg/L	104.5	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	.999	U	1.045	mg/L	104.6	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	.999	U	1.027	mg/L	102.8	85	115	1.74	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	.999	U	1.023	mg/L	102.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.999	U	1.019	mg/L	102	85	115	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		2.02	mg/L	101	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.12	0.12			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.088	0.088			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	.999		1.039	mg/L	104	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	.999	U	1.036	mg/L	103.7	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	.999	U	1.039	mg/L	104	70	130	0.29	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.003	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.12	0.12			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.088	0.088			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.999		1.034	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.999	U	1.072	mg/L	107.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.999	U	1.029	mg/L	103	70	130	4.09	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.015	mg/L	100.8	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.525	mg/L	104.9	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	.5005	.14	.657	mg/L	103.3	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	.5005	.14	.652	mg/L	102.3	85	115	0.76	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.11	.625	mg/L	102.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.11	.625	mg/L	102.9	85	115	0	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		2.04	mg/L	102	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.03	0.03			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.022	0.022			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	.5005		.52	mg/L	103.9	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	.5005	U	.508	mg/L	101.5	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	.5005	U	.511	mg/L	102.1	70	130	0.59	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.004	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.506	mg/L	101.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	.11	.617	mg/L	101.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	.11	.616	mg/L	101.1	70	130	0.16	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.04941	mg/L	98.8	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.0501		.04851	mg/L	96.8	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.0501	U	.04976	mg/L	99.3	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.0501	U	.0507	mg/L	101.2	70	130	1.87	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.04962	mg/L	99.2	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.04942	mg/L	98.6	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	U	.04846	mg/L	96.7	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	U	.04787	mg/L	95.5	70	130	1.22	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		99.28	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	67.98099		73.58	mg/L	108.2	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	67.98099	230	292.8	mg/L	92.4	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	67.98099	230	293.3	mg/L	93.1	85	115	0.17	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	67.98099	26.8	99.64	mg/L	107.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	67.98099	26.8	99.62	mg/L	107.1	85	115	0.02	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	100		100.45	mg/L	100.5	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.3	0.3			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.22	0.22			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	67.98099		76.54	mg/L	112.6	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	67.98099	14	89.4	mg/L	110.9	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	67.98099	14	89.27	mg/L	110.7	70	130	0.15	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		99.24	mg/L	99.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	67.98099		74.57	mg/L	109.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	67.98099	1.1	76.22	mg/L	110.5	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	67.98099	1.1	75.38	mg/L	109.3	70	130	1.11	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19103-01DUP	DUP	07/07/14 19:59			2.36	2.34	mg/L				0.9	20	RA
L19103-02AS	AS	07/07/14 20:34	WI140610-6	30	3.19	33	mg/L	99.4	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	10.5	41.5	mg/L	103.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05148	mg/L	103	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0015	0.0015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.05036	mg/L	100.6	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.04852	mg/L	96.9	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.04782	mg/L	95.5	70	130	1.45	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05067	mg/L	101.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04994	mg/L	99.8	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04846	mg/L	96.8	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.04908	mg/L	98.1	70	130	1.27	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.04961	mg/L	99.2	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.00015	0.00015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.05104	mg/L	102	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	.0001	.05119	mg/L	102.1	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	.0001	.05189	mg/L	103.5	70	130	1.36	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.04989	mg/L	99.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05064	mg/L	101.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.00008	.04872	mg/L	97.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.00008	.04874	mg/L	97.2	70	130	0.04	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW2	LCSW	07/01/14 19:09	PCN44568	1408.8		1433.3	umhos/cm	101.7	90	110			
WG366884LCSW5	LCSW	07/01/14 23:21	PCN44568	1408.8		1422.1	umhos/cm	100.9	90	110			
L19101-01DUP	DUP	07/02/14 1:50			1	1.1	umhos/cm				9.5	20	RA
WG366884LCSW8	LCSW	07/02/14 3:12	PCN44568	1408.8		1403.9	umhos/cm	99.7	90	110			
WG366884LCSW11	LCSW	07/02/14 7:08	PCN44568	1408.8		1391.7	umhos/cm	98.8	90	110			
WG366884LCSW14	LCSW	07/02/14 10:46	PCN44568	1408.8		1372.4	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05008	mg/L	100.2	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0015	0.0015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05		.04763	mg/L	95.3	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05	U	.04374	mg/L	87.5	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05	U	.04296	mg/L	85.9	70	130	1.8	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367311													
WG367311ICV	ICV	07/10/14 19:01	MS140513-1	.05		.04899	mg/L	98	90	110			
WG367311ICB	ICB	07/10/14 19:04				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/10/14 19:06				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/10/14 19:09	MS140625-3	.05		.04703	mg/L	94.1	85	115			
L19105-03LFM	LFM	07/10/14 19:19	MS140625-3	.05	U	.04547	mg/L	90.9	70	130			
L19105-03LFMD	LFMD	07/10/14 19:21	MS140625-3	.05	U	.045	mg/L	90	70	130	1.04	20	
WG367077LRB	LRB	07/10/14 19:46				.00068	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/10/14 19:49	MS140625-3	.05		.04713	mg/L	94.3	85	115			

SPF Water Engineering

ACZ Project ID: ***L19105***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366995													
WG366995ICV	ICV	07/02/14 22:20	WI140702-5	.3		.289	mg/L	96.3	90	110			
WG366995ICB	ICB	07/02/14 22:21				U	mg/L		-0.003	0.003			
WG366997													
WG366967LRB	LRB	07/02/14 22:57				U	mg/L		-0.003	0.003			
WG366967LFB	LFB	07/02/14 22:58	WI140702-2	.2		.2005	mg/L	100.3	90	110			
L19067-01DUP	DUP	07/02/14 23:00			U	U	mg/L				0	20	RA
L19067-02LFM	LFM	07/02/14 23:02	WI140702-2	.2	U	.2033	mg/L	101.7	90	110			
L19105-03DUP	DUP	07/02/14 23:12			U	U	mg/L				0	20	RA
L19105-04LFM	LFM	07/02/14 23:14	WI140702-2	.2	U	.2016	mg/L	100.8	90	110			

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366995													
WG366995ICV	ICV	07/02/14 22:20	WI140702-5	.3		.289	mg/L	96.3	90	110			
WG366995ICB	ICB	07/02/14 22:21				U	mg/L		-0.003	0.003			
WG366909													
WG366886LRB	LRB	07/02/14 23:33				U	mg/L		-0.003	0.003			
WG366886LFB	LFB	07/02/14 23:34	WI140617-1	.2		.2024	mg/L	101.2	90	110			
L19094-01DUP	DUP	07/02/14 23:48			.03	.0293	mg/L				2.4	20	
L19105-03LFM	LFM	07/02/14 23:50	WI140617-1	.2	U	.2031	mg/L	101.6	90	110			
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367057													
WG367029LRB	LRB	07/04/14 1:07				U	mg/L		-0.003	0.003			
WG367029LFB	LFB	07/04/14 1:08	WI140702-4	.2		.18	mg/L	90	90	110			
L19105-01LFM	LFM	07/04/14 1:10	WI140702-4	.2	U	.1625	mg/L	81.3	90	110			M2
L19105-02DUP	DUP	07/04/14 1:11			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
L19103-01DUP	DUP	07/07/14 19:59			.46	.46	mg/L				0	20	RA
L19103-02AS	AS	07/07/14 20:34	WI140610-6	1.5	.57	2.1	mg/L	102	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	1.5	.62	2.18	mg/L	104	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L19105***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.06	mg/L	103	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.001		1.05	mg/L	104.9	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1.001	U	1.07	mg/L	106.9	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1.001	U	1.1	mg/L	109.9	85	115	2.76	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.001	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.001	U	1.04	mg/L	103.9	85	115	0.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		2	mg/L	100	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.3	0.3			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.22	0.22			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1.001		1.11	mg/L	110.9	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1.001	U	1.08	mg/L	107.9	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1.001	U	1.06	mg/L	105.9	70	130	1.87	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.001		1.04	mg/L	103.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.001	U	1.05	mg/L	104.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.001	U	1.01	mg/L	100.9	70	130	3.88	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.966	mg/L	98.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.06	0.06			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0014		1.029	mg/L	102.8	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1.0014	U	1.029	mg/L	102.8	85	115	0.49	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0014	U	1.021	mg/L	102	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.975	mg/L	98.8	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.06	0.06			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.044	0.044			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1.0014		1.053	mg/L	105.2	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1.0014	42.1	42.06	mg/L	-4	70	130			M3
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1.0014	42.1	41.7	mg/L	-39.9	70	130	0.86	20	M3
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.965	mg/L	98.3	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.06	0.06			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.044	0.044			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0014		1.046	mg/L	104.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0014	U	1.045	mg/L	104.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0014	U	1.036	mg/L	103.5	70	130	0.86	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05113	mg/L	102.3	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.04989	mg/L	99.7	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.05084	mg/L	101.6	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.05128	mg/L	102.5	70	130	0.86	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05152	mg/L	103	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04887	mg/L	97.6	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04932	mg/L	98.5	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.04962	mg/L	99.1	70	130	0.61	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9912	mg/L	99.6	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.024	0.024			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.002		1.005	mg/L	100.3	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1.002	.058	1.079	mg/L	101.9	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1.002	.058	1.086	mg/L	102.6	85	115	0.65	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.002	.013	.999	mg/L	98.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.002	.013	1.009	mg/L	99.4	85	115	1	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.9822	mg/L	99.1	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.024	0.024			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.0176	0.0176			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1.002		1.035	mg/L	103.3	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1.002	.019	1.048	mg/L	102.7	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1.002	.019	1.046	mg/L	102.5	70	130	0.19	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9815	mg/L	99.1	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.024	0.024			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0176	0.0176			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.002		1.01	mg/L	100.8	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.002	U	1.016	mg/L	101.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.002	U	1.013	mg/L	101.1	70	130	0.3	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		96.44	mg/L	96.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	50.00131		50.21	mg/L	100.4	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	50.00131	155	201.2	mg/L	92.4	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	50.00131	155	200.8	mg/L	91.6	85	115	0.2	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	50.00131	15	64.79	mg/L	99.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	50.00131	15	64.82	mg/L	99.6	85	115	0.05	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	100		97.52	mg/L	97.5	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.6	0.6			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.44	0.44			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	50.00131		52.62	mg/L	105.2	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	50.00131	3.8	55.59	mg/L	103.6	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	50.00131	3.8	55.5	mg/L	103.4	70	130	0.16	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		96.61	mg/L	96.6	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	50.00131		51.21	mg/L	102.4	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	50.00131	.2	51.32	mg/L	102.2	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	50.00131	.2	50.69	mg/L	101	70	130	1.24	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05173	mg/L	103.5	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0015	0.0015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.0501		.0501	mg/L	100	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.0501	.001	.0502	mg/L	98.2	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.0501	.001	.05091	mg/L	99.6	70	130	1.4	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05216	mg/L	104.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.05004	mg/L	99.9	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	U	.04919	mg/L	98.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	U	.0497	mg/L	99.2	70	130	1.03	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
L19106-01MS	MS	07/01/14 14:23	HG140624-5	2	U	1.98	ng/L	99	71	125			
L19106-01MSD	MSD	07/01/14 14:28	HG140624-5	2	U	2	ng/L	100	71	125	1.01	24	
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L19105***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366793													
WG366793CCV1	CCV	07/01/14 9:39	HG140624-4	10		9.66	ng/L	96.6	76.5	123.4			
WG366793CCB1	CCB	07/01/14 9:44				U	ng/L		-0.5	0.5			
WG366793PQV	PQV	07/01/14 9:49	HG140624-6	.5		.59	ng/L	118	70	130			
WG366793LFB	LFB	07/01/14 9:54	HG140624-5	2		1.83	ng/L	91.5	71	125			
L19086-01MS	MS	07/01/14 10:04	HG5XPREP	50	20	29.3	ng/L	93	71	125			
L19086-01MSD	MSD	07/01/14 10:09	HG5XPREP	50	20	29.1	ng/L	91	71	125	0.68	24	
WG366793CCV2	CCV	07/01/14 10:30	HG140624-4	10		9.99	ng/L	99.9	76.5	123.4			
WG366793CCB2	CCB	07/01/14 10:35				U	ng/L		-0.5	0.5			
WG366793CCV3	CCV	07/01/14 11:20	HG140624-4	10		10	ng/L	100	76.5	123.4			
WG366793CCB3	CCB	07/01/14 11:25				U	ng/L		-0.5	0.5			
WG366793CCV4	CCV	07/01/14 12:34	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB4	CCB	07/01/14 12:39				U	ng/L		-0.5	0.5			
WG366793CCV5	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB5	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.01998		.01856	mg/L	92.9	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0015	0.0015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.0502		.04678	mg/L	93.2	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.0502	.0168	.06744	mg/L	100.9	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.0502	.0168	.06778	mg/L	101.6	70	130	0.5	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.01998		.01835	mg/L	91.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0502		.04825	mg/L	96.1	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0502	.0033	.05198	mg/L	97	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0502	.0033	.05236	mg/L	97.7	70	130	0.73	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05171	mg/L	103.4	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0018	0.0018			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05		.04971	mg/L	99.4	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05	U	.04609	mg/L	92.2	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05	U	.04525	mg/L	90.5	70	130	1.84	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05168	mg/L	103.4	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0018	0.0018			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00132	0.00132			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05		.04999	mg/L	100	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05	U	.04781	mg/L	95.6	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05	U	.04731	mg/L	94.6	70	130	1.05	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367059													
WG367059ICV	ICV	07/05/14 14:41	WI140417-3	2.416		2.4	mg/L	99.3	90	110			
WG367059ICB	ICB	07/05/14 14:42				U	mg/L		-0.06	0.06			
WG367059LFB1	LFB	07/05/14 14:45	WI140215-3	2		1.985	mg/L	99.3	90	110			
L19051-01AS	AS	07/05/14 15:04	WI140215-3	2	.06	2.135	mg/L	103.8	90	110			
L19051-02DUP	DUP	07/05/14 15:06			.58	.593	mg/L				2.2	20	
WG367059LFB2	LFB	07/05/14 15:19	WI140215-3	2		2.059	mg/L	103	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366971													
WG366971LFB1	LFB	07/02/14 15:11	WI140113-8	1		1.016	mg/L	101.6	90	110			
L19069-02AS	AS	07/02/14 15:28	WI140113-8	1	U	1.039	mg/L	103.9	90	110			
L19079-01DUP	DUP	07/02/14 15:30			U	U	mg/L				0	20	RA
WG366971LFB2	LFB	07/02/14 16:00	WI140113-8	1		.969	mg/L	96.9	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW1	LCSW	07/01/14 19:07	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366884LCSW4	LCSW	07/01/14 23:19	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
L19101-01DUP	DUP	07/02/14 1:50			6.3	6.12	units				2.9	20	
WG366884LCSW7	LCSW	07/02/14 3:10	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
WG366884LCSW10	LCSW	07/02/14 7:06	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
WG366884LCSW13	LCSW	07/02/14 10:44	PCN45265	5.99		6.07	units	101.3	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19105***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367043LRB	LRB	07/08/14 23:49				U	mg/L		-0.03	0.03			
WG367043LFB	LFB	07/08/14 23:50	WI140701-2	.5		.466	mg/L	93.2	90	110			
L19095-03LFM	LFM	07/09/14 0:08	WI140701-2	.5	.03	.502	mg/L	94.4	90	110			
L19095-04DUP	DUP	07/09/14 0:10			.06	.053	mg/L				12.4	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	20		19.69	mg/L	98.5	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	99.99364		102	mg/L	102	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	99.99364	4.5	108.9	mg/L	104.4	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	99.99364	4.5	109.6	mg/L	105.1	85	115	0.64	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	99.99364	9	111.1	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	99.99364	9	111.3	mg/L	102.3	85	115	0.18	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	20		19.75	mg/L	98.8	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.6	0.6			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.44	0.44			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	99.99364		104.9	mg/L	104.9	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	99.99364	6.2	110.3	mg/L	104.1	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	99.99364	6.2	110.4	mg/L	104.2	70	130	0.09	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	20		19.54	mg/L	97.7	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	99.99364		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	99.99364	5.7	108.4	mg/L	102.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	99.99364	5.7	107.6	mg/L	101.9	70	130	0.74	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366654													
WG366654PBW	PBW	06/27/14 10:27				U	mg/L		-20	20			
WG366654LCSW	LCSW	06/27/14 10:28	PCN46084	260		240	mg/L	92.3	80	120			
L19121-02DUP	DUP	06/27/14 11:06			730	732	mg/L				0.3	10	
WG366693													
WG366693PBW	PBW	06/27/14 13:59				U	mg/L		-20	20			
WG366693LCSW	LCSW	06/27/14 14:00	PCN46084	260		260	mg/L	100	80	120			
L19131-02DUP	DUP	06/27/14 14:38			2000	2042	mg/L				2.1	10	
WG366743													
WG366743PBW	PBW	06/30/14 10:45				U	mg/L		-20	20			
WG366743LCSW	LCSW	06/30/14 10:47	PCN46084	260		254	mg/L	97.7	80	120			
L19136-04DUP	DUP	06/30/14 11:45			1190	1230	mg/L				3.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366744													
WG366744PBW	PBW	06/30/14 14:55				U	mg/L		-15	15			
WG366744LCSW	LCSW	06/30/14 14:56	PCN46084	160		144	mg/L	90	80	120			
L19121-03DUP	DUP	06/30/14 15:34			U	U	mg/L				0	10	RA
WG366814													
WG366814PBW	PBW	07/01/14 8:20				U	mg/L		-15	15			
WG366814LCSW	LCSW	07/01/14 8:22	PCN46080	160		138	mg/L	86.3	80	120			
L19107-03DUP	DUP	07/01/14 9:09			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.02	mg/L	101	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1.0009	U	1.05	mg/L	104.9	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0.95	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0009	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.3	0.3			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.22	0.22			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1.0009		1.11	mg/L	110.9	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1.0009	U	1.1	mg/L	109.9	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1.0009	U	1.11	mg/L	110.9	70	130	0.9	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0009	U	1.07	mg/L	106.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05097	mg/L	101.9	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.05115	mg/L	102.2	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.05359	mg/L	107.1	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.05342	mg/L	106.7	70	130	0.32	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05207	mg/L	104	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0011	.04974	mg/L	97.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0011	.04952	mg/L	96.7	70	130	0.44	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.02002		.02007	mg/L	100.2	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.00015	0.00015			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.01002		.009884	mg/L	98.6	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.01002	U	.007403	mg/L	73.9	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.01002	U	.005995	mg/L	59.8	70	130	21.02	20	M2 RF

SPF Water Engineering

ACZ Project ID: ***L19105***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.02002		.01977	mg/L	98.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.01002		.009615	mg/L	96	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.01002	U	.009348	mg/L	93.3	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.01002	U	.009246	mg/L	92.3	70	130	1.1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		98.24	mg/L	98.2	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	100.0393		102.3	mg/L	102.3	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	100.0393	141	241.1	mg/L	100.1	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	100.0393	141	240.1	mg/L	99.1	85	115	0.42	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	100.0393	42.7	142.8	mg/L	100.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	100.0393	42.7	143.2	mg/L	100.5	85	115	0.28	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	100		98.87	mg/L	98.9	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.6	0.6			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.44	0.44			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	100.0393		104.5	mg/L	104.5	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	100.0393	3.7	107.6	mg/L	103.9	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	100.0393	3.7	107.8	mg/L	104.1	70	130	0.19	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		97.84	mg/L	97.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	100.0393		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	100.0393	108	210.4	mg/L	102.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	100.0393	108	211.2	mg/L	103.2	70	130	0.38	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9738	mg/L	98.7	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.5175	mg/L	103.4	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	.5005	1.43	1.884	mg/L	90.7	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	.5005	1.43	1.889	mg/L	91.7	85	115	0.27	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.15	.6609	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.15	.661	mg/L	102.1	85	115	0.02	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.9905	mg/L	99.5	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.015	0.015			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.011	0.011			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	.5005		.5279	mg/L	105.5	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	.5005	.226	.7495	mg/L	104.6	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	.5005	.226	.7495	mg/L	104.6	70	130	0	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9695	mg/L	98.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.514	mg/L	102.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.5235	mg/L	104.6	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.5187	mg/L	103.6	70	130	0.92	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
L19103-01DUP	DUP	07/07/14 19:59			17	17.3	mg/L				1.7	20	
L19103-02AS	AS	07/07/14 20:34	WI140610-6	30	7.52	37.1	mg/L	98.6	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	44	73.8	mg/L	99.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05466	mg/L	109.3	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.0502		.05241	mg/L	104.4	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.0502	U	.05313	mg/L	105.8	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.0502	U	.05344	mg/L	106.5	70	130	0.58	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05459	mg/L	109.2	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0502		.05019	mg/L	100	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0502	U	.05127	mg/L	102.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0502	U	.05136	mg/L	102.3	70	130	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.0501		.05206	mg/L	103.9	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.051	mg/L	101.9	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.05112	mg/L	102.1	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.05291	mg/L	105.7	70	130	3.44	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.0501		.04959	mg/L	99	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05509	mg/L	110.1	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04974	mg/L	99.4	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.05242	mg/L	104.7	70	130	5.25	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2	mg/L	100	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1		1.027	mg/L	102.7	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	1	U	1.026	mg/L	102.6	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	1	U	1.033	mg/L	103.3	85	115	0.68	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	1	U	1.022	mg/L	102.2	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1	U	1.025	mg/L	102.5	85	115	0.29	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		2.0008	mg/L	100	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.015	0.015			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.011	0.011			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	1		1.068	mg/L	106.8	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	1	U	1.065	mg/L	106.5	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	1	U	1.062	mg/L	106.2	70	130	0.28	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9955	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1		1.035	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1	U	1.041	mg/L	104.1	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1	U	1.032	mg/L	103.2	70	130	0.87	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05146	mg/L	102.9	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0003	0.0003			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.05015	mg/L	100.2	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	U	.05174	mg/L	103.4	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	U	.05239	mg/L	104.7	70	130	1.25	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05136	mg/L	102.7	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04828	mg/L	96.5	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0025	.05283	mg/L	100.6	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0025	.05285	mg/L	100.6	70	130	0.04	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366807													
WG366807ICV	ICV	06/30/14 22:33	MS140513-1	.05		.05152	mg/L	103	90	110			
WG366807ICB	ICB	06/30/14 22:36				U	mg/L		-0.0006	0.0006			
WG366807LFB	LFB	06/30/14 22:39	MS140625-3	.05005		.05207	mg/L	104	85	115			
L19105-01AS	AS	06/30/14 23:06	MS140625-3	.05005	.0002	.05203	mg/L	103.6	70	130			
L19105-01ASD	ASD	06/30/14 23:09	MS140625-3	.05005	.0002	.05192	mg/L	103.3	70	130	0.21	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05107	mg/L	102.1	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0006	0.0006			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00044	0.00044			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05141	mg/L	102.7	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0308	.08198	mg/L	102.3	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0308	.08372	mg/L	105.7	70	130	2.1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.985	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.534	mg/L	106.7	85	115			
L19079-01AS	AS	06/30/14 21:39	II140611-2	.5005	U	.54	mg/L	107.9	85	115			
L19079-01ASD	ASD	06/30/14 21:42	II140611-2	.5005	U	.54	mg/L	107.9	85	115	0	20	
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	U	.535	mg/L	106.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	U	.536	mg/L	107.1	85	115	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L19105***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366925													
WG366925ICV	ICV	07/03/14 10:52	II140624-2	2		1.953	mg/L	97.7	95	105			
WG366925ICB	ICB	07/03/14 10:58				U	mg/L		-0.03	0.03			
WG366879LRB	LRB	07/03/14 11:11				U	mg/L		-0.022	0.022			
WG366879LFB	LFB	07/03/14 11:14	II140611-2	.5005		.548	mg/L	109.5	85	115			
L19103-03LFM	LFM	07/03/14 12:33	II140611-2	.5005	.07	.605	mg/L	106.9	70	130			
L19103-03LFMD	LFMD	07/03/14 12:36	II140611-2	.5005	.07	.607	mg/L	107.3	70	130	0.33	20	
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.944	mg/L	97.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.532	mg/L	106.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.534	mg/L	106.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.528	mg/L	105.5	70	130	1.13	20	

SPF Water Engineering ACZ Project ID: ***L19105***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19105-01	WG366807	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	RF	Relative Percent Difference (RPD) for Ag in spiked samples exceeded limit. In the absence of HCl, precipitation of Ag may occur at different rates.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366997	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366814	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19105***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19105-02	WG366807	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	RF	Relative Percent Difference (RPD) for Ag in spiked samples exceeded limit. In the absence of HCl, precipitation of Ag may occur at different rates.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366997	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19105***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19105-03	WG366925	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366807	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	RF	Relative Percent Difference (RPD) for Ag in spiked samples exceeded limit. In the absence of HCl, precipitation of Ag may occur at different rates.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366997	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19105***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19105-04	WG366925	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG366807	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	RF	Relative Percent Difference (RPD) for Ag in spiked samples exceeded limit. In the absence of HCl, precipitation of Ag may occur at different rates.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366997	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366814	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19105
Date Received: 06/26/2014 09:48
Received By: mtb
Date Printed: 6/26/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the Matrix Line 1 section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19902	2.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID:	L19105
Date Received:	06/26/2014 09:48
Received By:	mtb
Date Printed:	6/26/2014

L19105
~~L190~~ L 6-26-14

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 2nd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Poison Spring	6/24/14 9:40	Gw	8	X							
Dry Creek Arm	6/23/14 15:20	Gw	8	X							
Sourdough Upper	6/23/14 16:50	Gw	8	X							
Equipment Blank	6/24/14 13:40	GW	8	X							
6											

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/25/14 7:00		6-26-14 0940

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19105 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 15, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19106

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 26, 2014. This project has been assigned to ACZ's project number, L19106. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19106. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 14, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 15, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19106

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on June 26, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19106. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19106. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L19106-01***
Date Sampled: *06/23/14 12:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/02/14 17:31	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 11:57	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 11:05	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 12:16	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L19106-01***
Date Sampled: *06/23/14 12:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:23	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:28	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 18:54	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/14 23:27	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0380			mg/L	0.0002	0.001	07/07/14 18:54	msh
Arsenic, total	M200.8 ICP-MS	1	0.0409			mg/L	0.0002	0.001	07/02/14 23:27	msh
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	06/30/14 22:23	jjc
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	07/03/14 14:28	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:06	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:27	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:23	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:28	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	06/30/14 22:23	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/03/14 14:28	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 18:54	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:27	msh
Calcium, dissolved	M200.7 ICP	1	26.8			mg/L	0.1	0.5	06/30/14 22:23	jjc
Calcium, total	M200.7 ICP	1	27.3			mg/L	0.1	0.5	07/03/14 14:28	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	07/07/14 18:54	msh
Chromium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/02/14 23:27	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	07/07/14 18:54	msh
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/02/14 23:27	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 18:54	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:27	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:23	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:28	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:23	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:28	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 18:54	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:27	msh
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	06/30/14 22:23	jjc
Lithium, total	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	07/03/14 14:28	jjc
Magnesium, dissolved	M200.7 ICP	1	15			mg/L	0.2	1	06/30/14 22:23	jjc
Magnesium, total	M200.7 ICP	1	15.2			mg/L	0.2	1	07/03/14 14:28	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	07/07/14 18:54	msh
Manganese, total	M200.8 ICP-MS	1	0.0043		*	mg/L	0.0005	0.003	07/02/14 23:27	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 14:18	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 11:00	las
Molybdenum, dissolved	M200.8 ICP-MS	5	0.009	B		mg/L	0.003	0.01	07/15/14 0:26	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	07/02/14 23:27	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 18:54	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:27	msh
Potassium, dissolved	M200.7 ICP	1	9			mg/L	0.2	1	06/30/14 22:23	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L19106-01***
Date Sampled: *06/23/14 12:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9			mg/L	0.2	1	07/03/14 14:28	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:23	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:28	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0003	07/07/14 18:54	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	07/02/14 23:27	msh
Silver, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:26	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:27	msh
Sodium, dissolved	M200.7 ICP	1	42.7			mg/L	0.2	1	06/30/14 22:23	jjc
Sodium, total	M200.7 ICP	1	43.2			mg/L	0.2	1	07/03/14 14:28	jjc
Strontium, dissolved	M200.7 ICP	1	0.150			mg/L	0.005	0.03	06/30/14 22:23	jjc
Strontium, total	M200.7 ICP	1	0.151			mg/L	0.005	0.03	07/03/14 14:28	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 18:54	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:27	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 18:54	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:27	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:23	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:28	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	07/07/14 18:54	msh
Uranium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/02/14 23:27	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0416			mg/L	0.0002	0.001	07/07/14 18:54	msh
Vanadium, total	M200.8 ICP-MS	1	0.0441			mg/L	0.0002	0.001	07/02/14 23:27	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:23	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:28	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L19106-01***
Date Sampled: *06/23/14 12:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	132			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	3	B		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	135		*	mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	10.5		*	mg/L	0.5	2.5	07/07/14 23:16	jlf
Conductivity @25C	SM2510B	1	456		*	umhos/cm	1	10	07/02/14 3:06	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/02/14 23:15	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:12	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.62		*	mg/L	0.05	0.25	07/07/14 23:16	jlf
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	0.8	4	07/15/14 13:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.92			mg/L	0.02	0.1	07/05/14 15:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:02	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	23			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 0:20	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	06/30/14 11:26	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:21	eaa
Sulfate	M300.0 - Ion Chromatography	1	44.0		*	mg/L	0.5	2.5	07/07/14 23:16	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L19106-02***
Date Sampled: *06/23/14 11:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 9:28	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:07	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:05	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 12:26	las
Total Hot Plate Digestion	M200.2 ICP								07/02/14 11:17	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L19106-02***
Date Sampled: *06/23/14 11:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:32	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:31	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:04	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/14 23:30	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0401			mg/L	0.0002	0.001	07/07/14 19:04	msh
Arsenic, total	M200.8 ICP-MS	1	0.0417			mg/L	0.0002	0.001	07/02/14 23:30	msh
Barium, dissolved	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	06/30/14 22:32	jjc
Barium, total	M200.7 ICP	1	0.007	B		mg/L	0.003	0.02	07/03/14 14:31	jjc
Beryllium, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:30	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:30	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:32	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:31	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	06/30/14 22:32	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/03/14 14:31	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:04	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:30	msh
Calcium, dissolved	M200.7 ICP	1	25.3			mg/L	0.1	0.5	06/30/14 22:32	jjc
Calcium, total	M200.7 ICP	1	25			mg/L	0.1	0.5	07/03/14 14:31	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	07/07/14 19:04	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	07/02/14 23:30	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00049			mg/L	0.00005	0.0003	07/07/14 19:04	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/02/14 23:30	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:04	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:30	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:32	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:31	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:32	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:31	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:04	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:30	msh
Lithium, dissolved	M200.7 ICP	1	0.015	B		mg/L	0.008	0.04	06/30/14 22:32	jjc
Lithium, total	M200.7 ICP	1	0.015	B		mg/L	0.008	0.04	07/03/14 14:31	jjc
Magnesium, dissolved	M200.7 ICP	1	14.8			mg/L	0.2	1	06/30/14 22:32	jjc
Magnesium, total	M200.7 ICP	1	14.5			mg/L	0.2	1	07/03/14 14:31	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0097			mg/L	0.0005	0.003	07/07/14 19:04	msh
Manganese, total	M200.8 ICP-MS	1	0.0136		*	mg/L	0.0005	0.003	07/02/14 23:30	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 14:33	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 11:05	las
Molybdenum, dissolved	M200.8 ICP-MS	5	0.010			mg/L	0.003	0.01	07/15/14 0:30	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0102			mg/L	0.0005	0.003	07/02/14 23:30	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:04	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:30	msh
Potassium, dissolved	M200.7 ICP	1	8.9			mg/L	0.2	1	06/30/14 22:32	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L19106-02***
Date Sampled: *06/23/14 11:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.7			mg/L	0.2	1	07/03/14 14:31	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:32	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:31	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0041			mg/L	0.0001	0.0003	07/07/14 19:04	msh
Selenium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0003	07/02/14 23:30	msh
Silver, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:30	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:30	msh
Sodium, dissolved	M200.7 ICP	1	45.2			mg/L	0.2	1	06/30/14 22:32	jjc
Sodium, total	M200.7 ICP	1	44.2			mg/L	0.2	1	07/03/14 14:31	jjc
Strontium, dissolved	M200.7 ICP	1	0.136			mg/L	0.005	0.03	06/30/14 22:32	jjc
Strontium, total	M200.7 ICP	1	0.133			mg/L	0.005	0.03	07/03/14 14:31	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:04	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:30	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:04	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:30	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:32	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:31	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0037			mg/L	0.0001	0.0005	07/07/14 19:04	msh
Uranium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	07/02/14 23:30	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0395			mg/L	0.0002	0.001	07/07/14 19:04	msh
Vanadium, total	M200.8 ICP-MS	1	0.0416			mg/L	0.0002	0.001	07/02/14 23:30	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:32	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:31	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L19106-02***
Date Sampled: *06/23/14 11:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	139			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	140			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	8.29		*	mg/L	0.5	2.5	07/07/14 23:51	jlf
Conductivity @25C	SM2510B	1	448			umhos/cm	1	10	07/02/14 3:44	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:18	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:13	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.60		*	mg/L	0.05	0.25	07/07/14 23:51	jlf
Hardness as CaCO3	SM2340B - Calculation		124			mg/L	0.8	4	07/15/14 13:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.13			mg/L	0.02	0.1	07/05/14 15:20	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:04	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/09/14 0:21	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	160			mg/L	10	20	06/30/14 11:29	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:22	eaa
Sulfate	M300.0 - Ion Chromatography	1	43.5		*	mg/L	0.5	2.5	07/07/14 23:51	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TS SOUTH DUPLICATE

ACZ Sample ID: ***L19106-03***
Date Sampled: *06/23/14 12:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 9:57	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:16	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:03	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 11:28	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 12:37	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TS SOUTH DUPLICATE

ACZ Sample ID: ***L19106-03***
Date Sampled: *06/23/14 12:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:35	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:35	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:07	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/14 23:33	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0394			mg/L	0.0002	0.001	07/07/14 19:07	msh
Arsenic, total	M200.8 ICP-MS	1	0.0409			mg/L	0.0002	0.001	07/02/14 23:33	msh
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	06/30/14 22:35	jjc
Barium, total	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	07/03/14 14:35	jjc
Beryllium, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:33	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:33	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:35	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:35	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	06/30/14 22:35	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/03/14 14:35	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:07	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:33	msh
Calcium, dissolved	M200.7 ICP	1	26.9			mg/L	0.1	0.5	06/30/14 22:35	jjc
Calcium, total	M200.7 ICP	1	26.7			mg/L	0.1	0.5	07/03/14 14:35	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	07/07/14 19:07	msh
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/02/14 23:33	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00012	B		mg/L	0.00005	0.0003	07/07/14 19:07	msh
Cobalt, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	07/02/14 23:33	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:07	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:33	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:35	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:35	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:35	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:35	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:07	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:33	msh
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	06/30/14 22:35	jjc
Lithium, total	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	07/03/14 14:35	jjc
Magnesium, dissolved	M200.7 ICP	1	15			mg/L	0.2	1	06/30/14 22:35	jjc
Magnesium, total	M200.7 ICP	1	14.9			mg/L	0.2	1	07/03/14 14:35	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/07/14 19:07	msh
Manganese, total	M200.8 ICP-MS	1	0.0024	B	*	mg/L	0.0005	0.003	07/02/14 23:33	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 14:38	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 11:10	las
Molybdenum, dissolved	M200.8 ICP-MS	5	0.009	B		mg/L	0.003	0.01	07/15/14 0:33	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0090			mg/L	0.0005	0.003	07/02/14 23:33	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:07	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:33	msh
Potassium, dissolved	M200.7 ICP	1	9			mg/L	0.2	1	06/30/14 22:35	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TS SOUTH DUPLICATE

ACZ Sample ID: ***L19106-03***
Date Sampled: *06/23/14 12:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8.8			mg/L	0.2	1	07/03/14 14:35	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:35	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:35	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0003	07/07/14 19:07	msh
Selenium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0003	07/02/14 23:33	msh
Silver, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:33	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:33	msh
Sodium, dissolved	M200.7 ICP	1	42.8			mg/L	0.2	1	06/30/14 22:35	jjc
Sodium, total	M200.7 ICP	1	42.2			mg/L	0.2	1	07/03/14 14:35	jjc
Strontium, dissolved	M200.7 ICP	1	0.150			mg/L	0.005	0.03	06/30/14 22:35	jjc
Strontium, total	M200.7 ICP	1	0.147			mg/L	0.005	0.03	07/03/14 14:35	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:07	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:33	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:07	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:33	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:35	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:35	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/07/14 19:07	msh
Uranium, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/02/14 23:33	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0419			mg/L	0.0002	0.001	07/07/14 19:07	msh
Vanadium, total	M200.8 ICP-MS	1	0.0449			mg/L	0.0002	0.001	07/02/14 23:33	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:35	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:35	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TS SOUTH DUPLICATE

ACZ Sample ID: ***L19106-03***
Date Sampled: *06/23/14 12:25*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	133			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	135			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	10.6		*	mg/L	0.5	2.5	07/08/14 0:09	jlf
Conductivity @25C	SM2510B	1	454			umhos/cm	1	10	07/02/14 3:53	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:19	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:14	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.63		*	mg/L	0.05	0.25	07/08/14 0:09	jlf
Hardness as CaCO3	SM2340B - Calculation		129			mg/L	0.8	4	07/15/14 13:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.93			mg/L	0.02	0.1	07/05/14 15:25	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:08	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	07/09/14 0:54	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	06/30/14 11:32	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:24	eaa
Sulfate	M300.0 - Ion Chromatography	1	43.9		*	mg/L	0.5	2.5	07/08/14 0:09	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L19106-04***
Date Sampled: *06/23/14 12:50*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 11:15	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19106***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884PBW1	PBW	07/01/14 19:03				U	mg/L		-20	20			
WG366884LCSW3	LCSW	07/01/14 19:22	WC140630-	820.0001		841.6	mg/L	102.6	90	110			
WG366884LCSW6	LCSW	07/01/14 23:36	WC140630-	820.0001		826.8	mg/L	100.8	90	110			
WG366884PBW2	PBW	07/01/14 23:44				U	mg/L		-20	20			
L19101-01DUP	DUP	07/02/14 1:50			U	U	mg/L				0	20	RA
WG366884LCSW9	LCSW	07/02/14 3:26	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW3	PBW	07/02/14 3:35				U	mg/L		-20	20			
L19111-01DUP	DUP	07/02/14 5:18			432	446.4	mg/L				3.3	20	
WG366884LCSW12	LCSW	07/02/14 7:22	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW4	PBW	07/02/14 7:31				2.1	mg/L		-20	20			
WG366884LCSW15	LCSW	07/02/14 11:01	WC140630-	820.0001		831.9	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.09	0.09			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0011		1.101	mg/L	110	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0011	U	1.091	mg/L	109	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0011	U	1.093	mg/L	109.2	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.09	0.09			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.066	0.066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0011		1.09	mg/L	108.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0011	U	1.099	mg/L	109.8	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0011	U	1.084	mg/L	108.3	70	130	1.37	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.02002		.01968	mg/L	98.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0012	0.0012			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.01		.00986	mg/L	98.6	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.01	U	.00908	mg/L	90.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.01	U	.00891	mg/L	89.1	70	130	1.89	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.02002		.02004	mg/L	100.1	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0012	0.0012			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00088	0.00088			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.01		.01077	mg/L	107.7	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.01	U	.01099	mg/L	109.9	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.01	U	.01101	mg/L	110.1	70	130	0.18	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05303	mg/L	106.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04817	mg/L	96.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.038	.08752	mg/L	98.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.038	.08786	mg/L	99.5	70	130	0.39	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05141	mg/L	102.8	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0006	0.0006			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00044	0.00044			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.05148	mg/L	102.8	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	.0055	.05671	mg/L	102.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	.0055	.05576	mg/L	100.3	70	130	1.69	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9683	mg/L	98.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.009	0.009			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5		.5041	mg/L	100.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5	.005	.5081	mg/L	100.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5	.005	.5103	mg/L	101.1	85	115	0.43	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.976	mg/L	98.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.009	0.009			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0066	0.0066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5		.5114	mg/L	102.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5	U	.5147	mg/L	102.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5	U	.511	mg/L	102.2	70	130	0.72	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.05		.04782	mg/L	95.6	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.00015	0.00015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.05005		.04925	mg/L	98.4	85	115			
L19102-02AS	AS	07/10/14 11:46	MS140625-3	.25025	U	.23765	mg/L	95	70	130			
L19102-02ASD	ASD	07/10/14 11:50	MS140625-3	.25025	U	.25295	mg/L	101.1	70	130	6.24	20	
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.05		.04683	mg/L	93.7	90	110			
WG367481ICB	ICB	07/15/14 0:19				.000052	mg/L		-0.00015	0.00015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.05005		.04749	mg/L	94.9	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.05005	U	.04687	mg/L	93.6	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.05005	U	.04862	mg/L	97.1	70	130	3.67	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04686	mg/L	93.7	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04737	mg/L	94.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.00792	.05715	mg/L	98.4	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.00792	.0564	mg/L	96.9	70	130	1.32	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.007	mg/L	100.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.12	0.12			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.999		1.044	mg/L	104.5	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.999	U	1.023	mg/L	102.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.999	U	1.019	mg/L	102	85	115	0.39	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.003	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.12	0.12			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.088	0.088			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.999		1.034	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.999	U	1.072	mg/L	107.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.999	U	1.029	mg/L	103	70	130	4.09	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.015	mg/L	100.8	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.525	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.11	.625	mg/L	102.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.11	.625	mg/L	102.9	85	115	0	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.004	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.506	mg/L	101.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	.11	.617	mg/L	101.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	.11	.616	mg/L	101.1	70	130	0.16	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05057	mg/L	101.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.0493	mg/L	98.4	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	U	.0447	mg/L	89.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	U	.04432	mg/L	88.5	70	130	0.85	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04878	mg/L	97.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.04771	mg/L	95.2	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	U	.04767	mg/L	95.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	U	.0479	mg/L	95.6	70	130	0.48	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		99.28	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	67.98099		73.58	mg/L	108.2	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	67.98099	26.8	99.64	mg/L	107.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	67.98099	26.8	99.62	mg/L	107.1	85	115	0.02	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		99.24	mg/L	99.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	67.98099		74.57	mg/L	109.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	67.98099	1.1	76.22	mg/L	110.5	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	67.98099	1.1	75.38	mg/L	109.3	70	130	1.11	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	10.5	41.5	mg/L	103.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04858	mg/L	97.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04588	mg/L	91.7	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0008	.04591	mg/L	90.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0008	.04657	mg/L	91.4	70	130	1.43	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.0491	mg/L	98.2	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04931	mg/L	98.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04864	mg/L	97.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04657	mg/L	93	70	130	4.35	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0494	mg/L	98.8	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.00015	0.00015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.05022	mg/L	100.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0003	.04704	mg/L	93.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0003	.04731	mg/L	93.9	70	130	0.57	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04907	mg/L	98.1	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.05055	mg/L	101	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.00124	.05095	mg/L	99.3	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.00124	.05063	mg/L	98.7	70	130	0.63	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW2	LCSW	07/01/14 19:09	PCN44568	1408.8		1433.3	umhos/cm	101.7	90	110			
WG366884LCSW5	LCSW	07/01/14 23:21	PCN44568	1408.8		1422.1	umhos/cm	100.9	90	110			
L19101-01DUP	DUP	07/02/14 1:50			1	1.1	umhos/cm				9.5	20	RA
WG366884LCSW8	LCSW	07/02/14 3:12	PCN44568	1408.8		1403.9	umhos/cm	99.7	90	110			
L19111-01DUP	DUP	07/02/14 5:18			2070	2080	umhos/cm				0.5	20	
WG366884LCSW11	LCSW	07/02/14 7:08	PCN44568	1408.8		1391.7	umhos/cm	98.8	90	110			
WG366884LCSW14	LCSW	07/02/14 10:46	PCN44568	1408.8		1372.4	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04718	mg/L	94.4	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04354	mg/L	87.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04296	mg/L	85.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04345	mg/L	86.9	70	130	1.13	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04782	mg/L	95.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05		.04749	mg/L	95	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05	U	.04654	mg/L	93.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05	U	.04401	mg/L	88	70	130	5.59	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366995													
WG366995ICV	ICV	07/02/14 22:20	WI140702-5	.3		.289	mg/L	96.3	90	110			
WG366995ICB	ICB	07/02/14 22:21				U	mg/L		-0.003	0.003			
WG366997													
WG366967LRB	LRB	07/02/14 22:57				U	mg/L		-0.003	0.003			
WG366967LFB	LFB	07/02/14 22:58	WI140702-2	.2		.2005	mg/L	100.3	90	110			
L19105-03DUP	DUP	07/02/14 23:12			U	U	mg/L				0	20	RA
L19105-04LFM	LFM	07/02/14 23:14	WI140702-2	.2	U	.2016	mg/L	100.8	90	110			
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367004LRB	LRB	07/04/14 0:16				U	mg/L		-0.003	0.003			
WG367004LFB	LFB	07/04/14 0:17	WI140702-2	.2		.1927	mg/L	96.4	90	110			
L19106-02LFM	LFM	07/04/14 0:19	WI140702-2	.2	U	.1934	mg/L	96.7	90	110			
L19106-03DUP	DUP	07/04/14 0:20			U	U	mg/L				0	20	RA

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367057													
WG367029LRB	LRB	07/04/14 1:07				U	mg/L		-0.003	0.003			
WG367029LFB	LFB	07/04/14 1:08	WI140702-4	.2		.18	mg/L	90	90	110			
L19105-01LFM	LFM	07/04/14 1:10	WI140702-4	.2	U	.1625	mg/L	81.3	90	110			M2
L19105-02DUP	DUP	07/04/14 1:11			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	1.5	.62	2.18	mg/L	104	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.06	mg/L	103	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.001		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.001	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.001	U	1.04	mg/L	103.9	85	115	0.96	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.001		1.04	mg/L	103.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.001	U	1.05	mg/L	104.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.001	U	1.01	mg/L	100.9	70	130	3.88	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.966	mg/L	98.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.06	0.06			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0014		1.029	mg/L	102.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0014	U	1.021	mg/L	102	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115	0.29	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.965	mg/L	98.3	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.06	0.06			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.044	0.044			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0014		1.046	mg/L	104.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0014	U	1.045	mg/L	104.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0014	U	1.036	mg/L	103.5	70	130	0.86	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04985	mg/L	99.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04765	mg/L	95.2	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04162	mg/L	83.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04194	mg/L	83.8	70	130	0.77	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04999	mg/L	100	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04879	mg/L	97.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.0002	.04911	mg/L	97.7	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.0002	.04915	mg/L	97.8	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9912	mg/L	99.6	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.024	0.024			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.002		1.005	mg/L	100.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.002	.013	.999	mg/L	98.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.002	.013	1.009	mg/L	99.4	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9815	mg/L	99.1	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.024	0.024			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0176	0.0176			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.002		1.01	mg/L	100.8	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.002	U	1.016	mg/L	101.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.002	U	1.013	mg/L	101.1	70	130	0.3	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		96.44	mg/L	96.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	50.00131		50.21	mg/L	100.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	50.00131	15	64.79	mg/L	99.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	50.00131	15	64.82	mg/L	99.6	85	115	0.05	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		96.61	mg/L	96.6	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	50.00131		51.21	mg/L	102.4	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	50.00131	.2	51.32	mg/L	102.2	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	50.00131	.2	50.69	mg/L	101	70	130	1.24	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04955	mg/L	98.9	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.0018	.04832	mg/L	92.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.0018	.0488	mg/L	93.8	70	130	0.99	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05148	mg/L	103	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.04979	mg/L	99.4	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	1.33	1.42	mg/L	179.6	70	130			M3
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	1.33	1.415	mg/L	169.7	70	130	0.35	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
L19106-01MS	MS	07/01/14 14:23	HG140624-5	2	U	1.98	ng/L	99	71	125			
L19106-01MSD	MSD	07/01/14 14:28	HG140624-5	2	U	2	ng/L	100	71	125	1.01	24	
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L19106***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366793													
WG366793CCV1	CCV	07/01/14 9:39	HG140624-4	10		9.66	ng/L	96.6	76.5	123.4			
WG366793CCB1	CCB	07/01/14 9:44				U	ng/L		-0.5	0.5			
WG366793PQV	PQV	07/01/14 9:49	HG140624-6	.5		.59	ng/L	118	70	130			
WG366793LFB	LFB	07/01/14 9:54	HG140624-5	2		1.83	ng/L	91.5	71	125			
L19086-01MS	MS	07/01/14 10:04	HG5XPREP	50	20	29.3	ng/L	93	71	125			
L19086-01MSD	MSD	07/01/14 10:09	HG5XPREP	50	20	29.1	ng/L	91	71	125	0.68	24	
WG366793CCV2	CCV	07/01/14 10:30	HG140624-4	10		9.99	ng/L	99.9	76.5	123.4			
WG366793CCB2	CCB	07/01/14 10:35				U	ng/L		-0.5	0.5			
WG366793CCV3	CCV	07/01/14 11:20	HG140624-4	10		10	ng/L	100	76.5	123.4			
WG366793CCB3	CCB	07/01/14 11:25				U	ng/L		-0.5	0.5			
L19107-01MS	MS	07/01/14 12:24	HG140624-5	2	U	2.08	ng/L	104	71	125			
L19107-01MSD	MSD	07/01/14 12:29	HG140624-5	2	U	2.06	ng/L	103	71	125	0.97	24	
WG366793CCV4	CCV	07/01/14 12:34	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB4	CCB	07/01/14 12:39				U	ng/L		-0.5	0.5			
WG366793CCV5	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB5	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.01998		.01797	mg/L	89.9	90	110			
WG367481ICB	ICB	07/15/14 0:19				U	mg/L		-0.0015	0.0015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.0502		.04726	mg/L	94.1	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.0502	.0115	.05883	mg/L	94.3	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.0502	.0115	.06165	mg/L	99.9	70	130	4.68	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.01998		.01798	mg/L	90	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0502		.04559	mg/L	90.8	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0502	U	.04641	mg/L	92.5	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0502	U	.04702	mg/L	93.7	70	130	1.31	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04748	mg/L	95	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0018	0.0018			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04453	mg/L	89.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04239	mg/L	84.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04311	mg/L	86.2	70	130	1.68	20	

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ACZ Project ID: ***L19106***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04943	mg/L	98.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0018	0.0018			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00132	0.00132			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05		.04846	mg/L	96.9	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05	.0036	.05109	mg/L	95	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05	.0036	.04914	mg/L	91.1	70	130	3.89	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367059													
WG367059ICV	ICV	07/05/14 14:41	WI140417-3	2.416		2.4	mg/L	99.3	90	110			
WG367059ICB	ICB	07/05/14 14:42				U	mg/L		-0.06	0.06			
WG367059LFB1	LFB	07/05/14 14:45	WI140215-3	2		1.985	mg/L	99.3	90	110			
L19051-01AS	AS	07/05/14 15:04	WI140215-3	2	.06	2.135	mg/L	103.8	90	110			
L19051-02DUP	DUP	07/05/14 15:06			.58	.593	mg/L				2.2	20	
WG367059LFB2	LFB	07/05/14 15:19	WI140215-3	2		2.059	mg/L	103	90	110			
L19106-02AS	AS	07/05/14 15:22	WI140215-3	2	1.13	3.019	mg/L	94.5	90	110			
L19106-03DUP	DUP	07/05/14 15:26			1.93	1.918	mg/L				0.6	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366971													
WG366971LFB1	LFB	07/02/14 15:11	WI140113-8	1		1.016	mg/L	101.6	90	110			
WG366971LFB2	LFB	07/02/14 16:00	WI140113-8	1		.969	mg/L	96.9	90	110			
L19106-01AS	AS	07/02/14 16:03	WI140113-8	1	U	.985	mg/L	98.5	90	110			
L19106-02DUP	DUP	07/02/14 16:05			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW1	LCSW	07/01/14 19:07	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366884LCSW4	LCSW	07/01/14 23:19	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
L19101-01DUP	DUP	07/02/14 1:50			6.3	6.12	units				2.9	20	
WG366884LCSW7	LCSW	07/02/14 3:10	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
L19111-01DUP	DUP	07/02/14 5:18			8.2	8.24	units				0.5	20	
WG366884LCSW10	LCSW	07/02/14 7:06	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
WG366884LCSW13	LCSW	07/02/14 10:44	PCN45265	5.99		6.07	units	101.3	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19106***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367043LRB	LRB	07/08/14 23:49				U	mg/L		-0.03	0.03			
WG367043LFB	LFB	07/08/14 23:50	WI140701-2	.5		.466	mg/L	93.2	90	110			
L19095-03LFM	LFM	07/09/14 0:08	WI140701-2	.5	.03	.502	mg/L	94.4	90	110			
L19095-04DUP	DUP	07/09/14 0:10			.06	.053	mg/L				12.4	20	RA
WG367220													
WG367044LRB	LRB	07/09/14 0:31				U	mg/L		-0.03	0.03			
WG367044LFB	LFB	07/09/14 0:33	WI140701-2	.5		.462	mg/L	92.4	90	110			
L19033-11LFM	LFM	07/09/14 0:51	WI140701-2	.5	.01	.491	mg/L	96.2	90	110			
L19033-13DUP	DUP	07/09/14 0:53			.1	.096	mg/L				4.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	20		19.69	mg/L	98.5	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	99.99364		102	mg/L	102	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	99.99364	9	111.1	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	99.99364	9	111.3	mg/L	102.3	85	115	0.18	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	20		19.54	mg/L	97.7	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	99.99364		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	99.99364	5.7	108.4	mg/L	102.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	99.99364	5.7	107.6	mg/L	101.9	70	130	0.74	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366743													
WG366743PBW	PBW	06/30/14 10:45				U	mg/L		-20	20			
WG366743LCSW	LCSW	06/30/14 10:47	PCN46084	260		254	mg/L	97.7	80	120			
L19136-04DUP	DUP	06/30/14 11:45			1190	1230	mg/L				3.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366744													
WG366744PBW	PBW	06/30/14 14:55				U	mg/L		-15	15			
WG366744LCSW	LCSW	06/30/14 14:56	PCN46084	160		144	mg/L	90	80	120			
L19121-03DUP	DUP	06/30/14 15:34			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L19106***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.02	mg/L	101	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0009	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0.95	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0009	U	1.07	mg/L	106.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05185	mg/L	103.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.0493	mg/L	98.5	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0046	.0538	mg/L	98.3	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0046	.05636	mg/L	103.4	70	130	4.65	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05135	mg/L	102.7	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.0489	mg/L	97.7	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04751	mg/L	94.9	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04894	mg/L	97.8	70	130	2.97	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.02002		.01997	mg/L	99.8	90	110			
WG367481ICB	ICB	07/15/14 0:19				U	mg/L		-0.00015	0.00015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.01002		.009948	mg/L	99.3	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.01002	.00009	.00941	mg/L	93	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.01002	.00009	.01051	mg/L	104	70	130	11.04	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.02002		.01999	mg/L	99.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.01002		.009565	mg/L	95.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.01002	U	.009543	mg/L	95.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.01002	U	.009678	mg/L	96.6	70	130	1.4	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		98.24	mg/L	98.2	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	100.0393		102.3	mg/L	102.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	100.0393	42.7	142.8	mg/L	100.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	100.0393	42.7	143.2	mg/L	100.5	85	115	0.28	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		97.84	mg/L	97.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	100.0393		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	100.0393	108	210.4	mg/L	102.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	100.0393	108	211.2	mg/L	103.2	70	130	0.38	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9738	mg/L	98.7	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.5175	mg/L	103.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.15	.6609	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.15	.661	mg/L	102.1	85	115	0.02	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9695	mg/L	98.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.514	mg/L	102.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.5235	mg/L	104.6	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.5187	mg/L	103.6	70	130	0.92	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	44	73.8	mg/L	99.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05394	mg/L	107.9	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0502		.05083	mg/L	101.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0502	U	.04755	mg/L	94.7	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0502	U	.04801	mg/L	95.6	70	130	0.96	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05344	mg/L	106.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0502		.0504	mg/L	100.4	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0502	U	.05094	mg/L	101.5	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0502	U	.0507	mg/L	101	70	130	0.47	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.0501		.04624	mg/L	92.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04558	mg/L	91.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04273	mg/L	85.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04222	mg/L	84.4	70	130	1.2	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.0501		.04872	mg/L	97.2	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04837	mg/L	96.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04838	mg/L	96.7	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04899	mg/L	97.9	70	130	1.25	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2	mg/L	100	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1		1.027	mg/L	102.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1	U	1.022	mg/L	102.2	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1	U	1.025	mg/L	102.5	85	115	0.29	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9955	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1		1.035	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1	U	1.041	mg/L	104.1	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1	U	1.032	mg/L	103.2	70	130	0.87	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0521	mg/L	104.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04943	mg/L	98.8	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0028	.0509	mg/L	96.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0028	.05116	mg/L	96.6	70	130	0.51	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05026	mg/L	100.5	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04885	mg/L	97.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04911	mg/L	98.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04974	mg/L	99.4	70	130	1.27	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04879	mg/L	97.6	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04761	mg/L	95.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0416	.08924	mg/L	95.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0416	.08989	mg/L	96.5	70	130	0.73	20	

SPF Water Engineering

ACZ Project ID: ***L19106***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04778	mg/L	95.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0006	0.0006			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00044	0.00044			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.05011	mg/L	100.1	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.05011	mg/L	100.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04798	mg/L	95.9	70	130	4.34	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.985	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.534	mg/L	106.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	U	.535	mg/L	106.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	U	.536	mg/L	107.1	85	115	0.19	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.944	mg/L	97.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.532	mg/L	106.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.534	mg/L	106.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.528	mg/L	105.5	70	130	1.13	20	

SPF Water Engineering ACZ Project ID: ***L19106***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19106-01	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366997	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366884	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19106-02	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367218	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19106***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19106-03	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19106
Date Received: 06/26/2014 09:47
Received By: mtb
Date Printed: 6/26/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the Date:Time Line 2 section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19901	4	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID:	L19106
Date Received:	06/26/2014 09:47
Received By:	mtb
Date Printed:	6/26/2014

L19106

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 2nd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	per ACZ QA/QC						
Twin Springs South	6/23/14 12:15	GW	8	X							
Twin Spring North	6/23/14 11:25	GW	8	X							
TS South Duplicate	6/23/14 12:25	GW	8	X							
Mercury Trip Blank	6/23/14 12:50	—	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/25/14 7:00	NRC	6/26/14 0940

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19106 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 15, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19107

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 26, 2014. This project has been assigned to ACZ's project number, L19107. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19107. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 14, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

July 15, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19107

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on June 26, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19107. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19107. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L19107-01***
Date Sampled: *06/24/14 14:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 10:26	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:26	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:03	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 12:48	las
Total Hot Plate Digestion	M200.2 ICP								07/02/14 11:40	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L19107-01***
Date Sampled: *06/24/14 14:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:38	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:38	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/07/14 19:17	msh
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/02/14 23:37	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0853			mg/L	0.0002	0.001	07/07/14 19:17	msh
Arsenic, total	M200.8 ICP-MS	1	0.0826			mg/L	0.0002	0.001	07/02/14 23:37	msh
Barium, dissolved	M200.7 ICP	1	0.046			mg/L	0.003	0.02	06/30/14 22:38	jjc
Barium, total	M200.7 ICP	1	0.046			mg/L	0.003	0.02	07/03/14 14:38	jjc
Beryllium, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:36	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:37	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:38	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:38	jjc
Boron, dissolved	M200.7 ICP	1	0.19			mg/L	0.01	0.05	06/30/14 22:38	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/03/14 14:38	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:17	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:37	msh
Calcium, dissolved	M200.7 ICP	1	36.9			mg/L	0.1	0.5	06/30/14 22:38	jjc
Calcium, total	M200.7 ICP	1	37.1			mg/L	0.1	0.5	07/03/14 14:38	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/07/14 19:17	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/14 23:37	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00029	B		mg/L	0.00005	0.0003	07/07/14 19:17	msh
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/02/14 23:37	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:17	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:37	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:38	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:38	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:38	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:38	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:17	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:37	msh
Lithium, dissolved	M200.7 ICP	1	0.106			mg/L	0.008	0.04	06/30/14 22:38	jjc
Lithium, total	M200.7 ICP	1	0.107			mg/L	0.008	0.04	07/03/14 14:38	jjc
Magnesium, dissolved	M200.7 ICP	1	6.1			mg/L	0.2	1	06/30/14 22:38	jjc
Magnesium, total	M200.7 ICP	1	6.2			mg/L	0.2	1	07/03/14 14:38	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:17	msh
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/02/14 23:37	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 16:45	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 12:19	las
Molybdenum, dissolved	M200.8 ICP-MS	5	0.020			mg/L	0.003	0.01	07/15/14 0:36	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0199			mg/L	0.0005	0.003	07/02/14 23:37	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:17	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:37	msh
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	06/30/14 22:38	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L19107-01***
Date Sampled: *06/24/14 14:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	07/03/14 14:38	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:38	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:38	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0003	07/07/14 19:17	msh
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	07/02/14 23:37	msh
Silver, dissolved	M200.8 ICP-MS	5		U		mg/L	0.0003	0.001	07/15/14 0:36	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:37	msh
Sodium, dissolved	M200.7 ICP	1	69.8			mg/L	0.2	1	06/30/14 22:38	jjc
Sodium, total	M200.7 ICP	1	70			mg/L	0.2	1	07/03/14 14:38	jjc
Strontium, dissolved	M200.7 ICP	1	0.157			mg/L	0.005	0.03	06/30/14 22:38	jjc
Strontium, total	M200.7 ICP	1	0.156			mg/L	0.005	0.03	07/03/14 14:38	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:17	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:37	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:17	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:37	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:38	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:38	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0047			mg/L	0.0001	0.0005	07/07/14 19:17	msh
Uranium, total	M200.8 ICP-MS	1	0.0051			mg/L	0.0001	0.0005	07/02/14 23:37	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0207			mg/L	0.0002	0.001	07/07/14 19:17	msh
Vanadium, total	M200.8 ICP-MS	1	0.0216			mg/L	0.0002	0.001	07/02/14 23:37	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:38	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:38	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L19107-01***
Date Sampled: *06/24/14 14:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	115			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	117			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	5	6.57	B	*	mg/L	2.5	12.5	07/08/14 1:03	jlf
Conductivity @25C	SM2510B	1	555			umhos/cm	1	10	07/02/14 4:02	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:21	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:15	pjb
Fluoride	M300.0 - Ion Chromatography	5	0.55	B	*	mg/L	0.25	1.25	07/08/14 1:03	jlf
Hardness as CaCO3	SM2340B - Calculation		117			mg/L	0.8	4	07/15/14 13:51	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.03	B		mg/L	0.02	0.1	07/05/14 15:28	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:55	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	07/09/14 0:55	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	380			mg/L	10	20	06/30/14 1:57	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 9:03	nml
Sulfate	M300.0 - Ion Chromatography	5	125		*	mg/L	2.5	12.5	07/08/14 1:03	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL

ACZ Sample ID: ***L19107-02***
Date Sampled: *06/24/14 13:05*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 10:40	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:36	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 11:51	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 12:59	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL

ACZ Sample ID: ***L19107-02***
Date Sampled: *06/24/14 13:05*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:47	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:41	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:20	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/14 23:40	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0073			mg/L	0.0002	0.001	07/07/14 19:20	msh
Arsenic, total	M200.8 ICP-MS	1	0.0072			mg/L	0.0002	0.001	07/02/14 23:40	msh
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	06/30/14 22:47	jjc
Barium, total	M200.7 ICP	1	0.023			mg/L	0.003	0.02	07/03/14 14:41	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:31	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:40	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:47	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:41	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	06/30/14 22:47	jjc
Boron, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	07/03/14 14:41	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:20	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:40	msh
Calcium, dissolved	M200.7 ICP	1	47.8			mg/L	0.1	0.5	06/30/14 22:47	jjc
Calcium, total	M200.7 ICP	1	48.2			mg/L	0.1	0.5	07/03/14 14:41	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/07/14 19:20	msh
Chromium, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.002	07/02/14 23:40	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	07/07/14 19:20	msh
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	07/02/14 23:40	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:20	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:40	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:47	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:41	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:47	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:41	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:20	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:40	msh
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	06/30/14 22:47	jjc
Lithium, total	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	07/03/14 14:41	jjc
Magnesium, dissolved	M200.7 ICP	1	14.4			mg/L	0.2	1	06/30/14 22:47	jjc
Magnesium, total	M200.7 ICP	1	14.5			mg/L	0.2	1	07/03/14 14:41	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:20	msh
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/02/14 23:40	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/01/14 16:50	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/01/14 12:44	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/10/14 12:31	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/02/14 23:40	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:20	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:40	msh
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.2	1	06/30/14 22:47	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL

ACZ Sample ID: ***L19107-02***
Date Sampled: *06/24/14 13:05*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.1			mg/L	0.2	1	07/03/14 14:41	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:47	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:41	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	07/07/14 19:20	msh
Selenium, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	07/02/14 23:40	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:31	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:40	msh
Sodium, dissolved	M200.7 ICP	1	18			mg/L	0.2	1	06/30/14 22:47	jjc
Sodium, total	M200.7 ICP	1	18.1			mg/L	0.2	1	07/03/14 14:41	jjc
Strontium, dissolved	M200.7 ICP	1	0.241			mg/L	0.005	0.03	06/30/14 22:47	jjc
Strontium, total	M200.7 ICP	1	0.241			mg/L	0.005	0.03	07/03/14 14:41	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:20	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:40	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:20	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:40	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:47	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:41	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	07/07/14 19:20	msh
Uranium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	07/02/14 23:40	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0186			mg/L	0.0002	0.001	07/07/14 19:20	msh
Vanadium, total	M200.8 ICP-MS	1	0.0194			mg/L	0.0002	0.001	07/02/14 23:40	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:47	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:41	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL

ACZ Sample ID: ***L19107-02***
Date Sampled: *06/24/14 13:05*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	137			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	4	B		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	141			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	13.0		*	mg/L	0.5	2.5	07/08/14 1:21	jlf
Conductivity @25C	SM2510B	1	432			umhos/cm	1	10	07/02/14 4:11	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:22	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:18	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.37		*	mg/L	0.05	0.25	07/08/14 1:21	jlf
Hardness as CaCO3	SM2340B - Calculation		179			mg/L	0.8	4	07/15/14 13:51	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.62			mg/L	0.02	0.1	07/05/14 15:29	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:58	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B		mg/L	0.01	0.05	07/09/14 0:58	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	300	H	*	mg/L	10	20	07/02/14 10:42	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 9:05	nml
Sulfate	M300.0 - Ion Chromatography	1	23.6		*	mg/L	0.5	2.5	07/08/14 1:21	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L19107-03***
Date Sampled: *06/24/14 15:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 10:55	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:45	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/01/14 13:10	las
Total Hot Plate Digestion	M200.2 ICP								07/02/14 12:26	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L19107-03***
Date Sampled: *06/24/14 15:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:50	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:50	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:23	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/02/14 23:43	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0581			mg/L	0.0002	0.001	07/07/14 19:23	msh
Arsenic, total	M200.8 ICP-MS	1	0.0581			mg/L	0.0002	0.001	07/02/14 23:43	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	06/30/14 22:50	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/14 14:50	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:34	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:43	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:50	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:50	jjc
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	06/30/14 22:50	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	07/03/14 14:50	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:23	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:43	msh
Calcium, dissolved	M200.7 ICP	1	11.9			mg/L	0.1	0.5	06/30/14 22:50	jjc
Calcium, total	M200.7 ICP	1	11.7			mg/L	0.1	0.5	07/03/14 14:50	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/07/14 19:23	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/02/14 23:43	msh
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/07/14 19:23	msh
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:43	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:23	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/02/14 23:43	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:50	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:50	jjc
Iron, dissolved	M200.7 ICP	1	0.05			mg/L	0.02	0.05	06/30/14 22:50	jjc
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	07/03/14 14:50	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:23	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:43	msh
Lithium, dissolved	M200.7 ICP	1	0.159			mg/L	0.008	0.04	06/30/14 22:50	jjc
Lithium, total	M200.7 ICP	1	0.156			mg/L	0.008	0.04	07/03/14 14:50	jjc
Magnesium, dissolved	M200.7 ICP	1	0.4	B		mg/L	0.2	1	06/30/14 22:50	jjc
Magnesium, total	M200.7 ICP	1	0.4	B		mg/L	0.2	1	07/03/14 14:50	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0442			mg/L	0.0005	0.003	07/07/14 19:23	msh
Manganese, total	M200.8 ICP-MS	1	0.0445		*	mg/L	0.0005	0.003	07/02/14 23:43	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/01/14 16:56	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/01/14 12:49	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0073			mg/L	0.0005	0.003	07/10/14 12:34	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0070			mg/L	0.0005	0.003	07/02/14 23:43	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:23	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/02/14 23:43	msh
Potassium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	06/30/14 22:50	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L19107-03***
Date Sampled: *06/24/14 15:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.5	B		mg/L	0.2	1	07/03/14 14:50	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:50	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:50	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/07/14 19:23	msh
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/02/14 23:43	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:34	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/02/14 23:43	msh
Sodium, dissolved	M200.7 ICP	1	131			mg/L	0.2	1	06/30/14 22:50	jjc
Sodium, total	M200.7 ICP	1	128			mg/L	0.2	1	07/03/14 14:50	jjc
Strontium, dissolved	M200.7 ICP	1	0.038			mg/L	0.005	0.03	06/30/14 22:50	jjc
Strontium, total	M200.7 ICP	1	0.036			mg/L	0.005	0.03	07/03/14 14:50	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:23	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:43	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:23	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/02/14 23:43	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:50	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:50	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:23	msh
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/02/14 23:43	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/07/14 19:23	msh
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/02/14 23:43	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:50	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:50	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PROD-1

ACZ Sample ID: ***L19107-03***
Date Sampled: *06/24/14 15:40*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	159			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	11	B		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	170			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	22.0		*	mg/L	0.5	2.5	07/08/14 1:39	jlf
Conductivity @25C	SM2510B	1	639			umhos/cm	1	10	07/02/14 4:20	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:23	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:18	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.06		*	mg/L	0.05	0.25	07/08/14 1:39	jlf
Hardness as CaCO3	SM2340B - Calculation		31			mg/L	0.8	4	07/15/14 13:52	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:30	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.09	B	*	mg/L	0.05	0.2	07/02/14 16:59	bsu
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B		mg/L	0.01	0.05	07/09/14 1:00	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	380	H	*	mg/L	10	20	07/02/14 10:44	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 9:07	nml
Sulfate	M300.0 - Ion Chromatography	1	80.2		*	mg/L	0.5	2.5	07/08/14 1:39	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: CYANIDE TRIP BLANK

ACZ Sample ID: ***L19107-04***
Date Sampled: *06/24/14 00:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 11:09	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 12:55	mss2

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:24	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:19	pjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19107***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884PBW1	PBW	07/01/14 19:03				U	mg/L		-20	20			
WG366884LCSW3	LCSW	07/01/14 19:22	WC140630-	820.0001		841.6	mg/L	102.6	90	110			
WG366884LCSW6	LCSW	07/01/14 23:36	WC140630-	820.0001		826.8	mg/L	100.8	90	110			
WG366884PBW2	PBW	07/01/14 23:44				U	mg/L		-20	20			
WG366884LCSW9	LCSW	07/02/14 3:26	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW3	PBW	07/02/14 3:35				U	mg/L		-20	20			
L19111-01DUP	DUP	07/02/14 5:18			432	446.4	mg/L				3.3	20	
WG366884LCSW12	LCSW	07/02/14 7:22	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW4	PBW	07/02/14 7:31				2.1	mg/L		-20	20			
WG366884LCSW15	LCSW	07/02/14 11:01	WC140630-	820.0001		831.9	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.09	0.09			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0011		1.101	mg/L	110	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0011	U	1.091	mg/L	109	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0011	U	1.093	mg/L	109.2	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.09	0.09			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.066	0.066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0011		1.09	mg/L	108.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0011	U	1.099	mg/L	109.8	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0011	U	1.084	mg/L	108.3	70	130	1.37	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0011	U	1.105	mg/L	110.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0011	U	1.112	mg/L	111.1	70	130	0.63	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.02002		.01968	mg/L	98.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0012	0.0012			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.01		.00986	mg/L	98.6	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.01	U	.00908	mg/L	90.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.01	U	.00891	mg/L	89.1	70	130	1.89	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.02002		.02004	mg/L	100.1	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0012	0.0012			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00088	0.00088			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.01		.01077	mg/L	107.7	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.01	U	.01099	mg/L	109.9	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.01	U	.01101	mg/L	110.1	70	130	0.18	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05303	mg/L	106.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04817	mg/L	96.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.038	.08752	mg/L	98.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.038	.08786	mg/L	99.5	70	130	0.39	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05141	mg/L	102.8	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0006	0.0006			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00044	0.00044			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.05148	mg/L	102.8	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	.0055	.05671	mg/L	102.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	.0055	.05576	mg/L	100.3	70	130	1.69	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9683	mg/L	98.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.009	0.009			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5		.5041	mg/L	100.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5	.005	.5081	mg/L	100.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5	.005	.5103	mg/L	101.1	85	115	0.43	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.976	mg/L	98.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.009	0.009			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0066	0.0066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5		.5114	mg/L	102.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5	U	.5147	mg/L	102.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5	U	.511	mg/L	102.2	70	130	0.72	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5	.023	.5301	mg/L	101.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5	.023	.5346	mg/L	102.3	70	130	0.85	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.05		.04782	mg/L	95.6	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.00015	0.00015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.05005		.04925	mg/L	98.4	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.05005	U	.04693	mg/L	93.8	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.05005	U	.04657	mg/L	93	70	130	0.77	20	
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.05		.04683	mg/L	93.7	90	110			
WG367481ICB	ICB	07/15/14 0:19				.000052	mg/L		-0.00015	0.00015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.05005		.04749	mg/L	94.9	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.05005	U	.04687	mg/L	93.6	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.05005	U	.04862	mg/L	97.1	70	130	3.67	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04686	mg/L	93.7	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04737	mg/L	94.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.00792	.05715	mg/L	98.4	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.00792	.0564	mg/L	96.9	70	130	1.32	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.007	mg/L	100.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.12	0.12			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.999		1.044	mg/L	104.5	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.999	U	1.023	mg/L	102.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.999	U	1.019	mg/L	102	85	115	0.39	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.003	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.12	0.12			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.088	0.088			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.999		1.034	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.999	U	1.072	mg/L	107.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.999	U	1.029	mg/L	103	70	130	4.09	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.999	U	1.03	mg/L	103.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.999	U	1.046	mg/L	104.7	70	130	1.54	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.015	mg/L	100.8	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.525	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.11	.625	mg/L	102.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.11	.625	mg/L	102.9	85	115	0	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.004	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.506	mg/L	101.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	.11	.617	mg/L	101.3	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	.11	.616	mg/L	101.1	70	130	0.16	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.03	.549	mg/L	103.7	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.03	.549	mg/L	103.7	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05057	mg/L	101.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.0493	mg/L	98.4	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	U	.0447	mg/L	89.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	U	.04432	mg/L	88.5	70	130	0.85	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04878	mg/L	97.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.04771	mg/L	95.2	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	U	.04767	mg/L	95.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	U	.0479	mg/L	95.6	70	130	0.48	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		99.28	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	67.98099		73.58	mg/L	108.2	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	67.98099	26.8	99.64	mg/L	107.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	67.98099	26.8	99.62	mg/L	107.1	85	115	0.02	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		99.24	mg/L	99.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	67.98099		74.57	mg/L	109.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	67.98099	1.1	76.22	mg/L	110.5	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	67.98099	1.1	75.38	mg/L	109.3	70	130	1.11	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	67.98099	48.2	121.2	mg/L	107.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	67.98099	48.2	123.2	mg/L	110.3	70	130	1.64	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	10.5	41.5	mg/L	103.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04858	mg/L	97.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04588	mg/L	91.7	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0008	.04591	mg/L	90.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0008	.04657	mg/L	91.4	70	130	1.43	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.0491	mg/L	98.2	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04931	mg/L	98.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04864	mg/L	97.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04657	mg/L	93	70	130	4.35	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0494	mg/L	98.8	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.00015	0.00015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.05022	mg/L	100.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0003	.04704	mg/L	93.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0003	.04731	mg/L	93.9	70	130	0.57	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04907	mg/L	98.1	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.05055	mg/L	101	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.00124	.05095	mg/L	99.3	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.00124	.05063	mg/L	98.7	70	130	0.63	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW2	LCSW	07/01/14 19:09	PCN44568	1408.8		1433.3	umhos/cm	101.7	90	110			
WG366884LCSW5	LCSW	07/01/14 23:21	PCN44568	1408.8		1422.1	umhos/cm	100.9	90	110			
WG366884LCSW8	LCSW	07/02/14 3:12	PCN44568	1408.8		1403.9	umhos/cm	99.7	90	110			
L19111-01DUP	DUP	07/02/14 5:18			2070	2080	umhos/cm				0.5	20	
WG366884LCSW11	LCSW	07/02/14 7:08	PCN44568	1408.8		1391.7	umhos/cm	98.8	90	110			
WG366884LCSW14	LCSW	07/02/14 10:46	PCN44568	1408.8		1372.4	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04718	mg/L	94.4	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04354	mg/L	87.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04296	mg/L	85.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04345	mg/L	86.9	70	130	1.13	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04782	mg/L	95.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05		.04749	mg/L	95	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05	U	.04654	mg/L	93.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05	U	.04401	mg/L	88	70	130	5.59	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367004LRB	LRB	07/04/14 0:16				U	mg/L		-0.003	0.003			
WG367004LFB	LFB	07/04/14 0:17	WI140702-2	.2		.1927	mg/L	96.4	90	110			
L19106-02LFM	LFM	07/04/14 0:19	WI140702-2	.2	U	.1934	mg/L	96.7	90	110			
L19106-03DUP	DUP	07/04/14 0:20			U	U	mg/L				0	20	RA

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367057													
WG367029LRB	LRB	07/04/14 1:07				U	mg/L		-0.003	0.003			
WG367029LFB	LFB	07/04/14 1:08	WI140702-4	.2		.18	mg/L	90	90	110			
L19105-01LFM	LFM	07/04/14 1:10	WI140702-4	.2	U	.1625	mg/L	81.3	90	110			M2
L19105-02DUP	DUP	07/04/14 1:11			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	1.5	.62	2.18	mg/L	104	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.06	mg/L	103	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.001		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.001	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.001	U	1.04	mg/L	103.9	85	115	0.96	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.001		1.04	mg/L	103.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.001	U	1.05	mg/L	104.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.001	U	1.01	mg/L	100.9	70	130	3.88	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.001	U	1.03	mg/L	102.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.001	U	1.03	mg/L	102.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.966	mg/L	98.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.06	0.06			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0014		1.029	mg/L	102.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0014	U	1.021	mg/L	102	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115	0.29	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.965	mg/L	98.3	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.06	0.06			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.044	0.044			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0014		1.046	mg/L	104.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0014	U	1.045	mg/L	104.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0014	U	1.036	mg/L	103.5	70	130	0.86	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0014	U	1.021	mg/L	102	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0014	U	1.044	mg/L	104.3	70	130	2.23	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04985	mg/L	99.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04765	mg/L	95.2	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04162	mg/L	83.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04194	mg/L	83.8	70	130	0.77	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04999	mg/L	100	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04879	mg/L	97.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	.0002	.04911	mg/L	97.7	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	.0002	.04915	mg/L	97.8	70	130	0.08	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9912	mg/L	99.6	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.024	0.024			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.002		1.005	mg/L	100.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.002	.013	.999	mg/L	98.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.002	.013	1.009	mg/L	99.4	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9815	mg/L	99.1	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.024	0.024			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0176	0.0176			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.002		1.01	mg/L	100.8	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.002	U	1.016	mg/L	101.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.002	U	1.013	mg/L	101.1	70	130	0.3	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.002	.018	1.023	mg/L	100.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.002	.018	1.037	mg/L	101.7	70	130	1.36	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		96.44	mg/L	96.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	50.00131		50.21	mg/L	100.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	50.00131	15	64.79	mg/L	99.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	50.00131	15	64.82	mg/L	99.6	85	115	0.05	20	

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ACZ Project ID: ***L19107***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		96.61	mg/L	96.6	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	50.00131		51.21	mg/L	102.4	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	50.00131	.2	51.32	mg/L	102.2	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	50.00131	.2	50.69	mg/L	101	70	130	1.24	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	50.00131	14.5	65.07	mg/L	101.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	50.00131	14.5	65.85	mg/L	102.7	70	130	1.19	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04955	mg/L	98.9	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.0018	.04832	mg/L	92.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.0018	.0488	mg/L	93.8	70	130	0.99	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05148	mg/L	103	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0501		.04979	mg/L	99.4	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0501	1.33	1.42	mg/L	179.6	70	130			M3
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0501	1.33	1.415	mg/L	169.7	70	130	0.35	20	M3

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ACZ Project ID: ***L19107***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
L19106-01MS	MS	07/01/14 14:23	HG140624-5	2	U	1.98	ng/L	99	71	125			
L19106-01MSD	MSD	07/01/14 14:28	HG140624-5	2	U	2	ng/L	100	71	125	1.01	24	
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366793													
WG366793CCV1	CCV	07/01/14 9:39	HG140624-4	10		9.66	ng/L	96.6	76.5	123.4			
WG366793CCB1	CCB	07/01/14 9:44				U	ng/L		-0.5	0.5			
WG366793PQV	PQV	07/01/14 9:49	HG140624-6	.5		.59	ng/L	118	70	130			
WG366793LFB	LFB	07/01/14 9:54	HG140624-5	2		1.83	ng/L	91.5	71	125			
WG366793CCV2	CCV	07/01/14 10:30	HG140624-4	10		9.99	ng/L	99.9	76.5	123.4			
WG366793CCB2	CCB	07/01/14 10:35				U	ng/L		-0.5	0.5			
WG366793CCV3	CCV	07/01/14 11:20	HG140624-4	10		10	ng/L	100	76.5	123.4			
WG366793CCB3	CCB	07/01/14 11:25				U	ng/L		-0.5	0.5			
L19107-01MS	MS	07/01/14 12:24	HG140624-5	2	U	2.08	ng/L	104	71	125			
L19107-01MSD	MSD	07/01/14 12:29	HG140624-5	2	U	2.06	ng/L	103	71	125	0.97	24	
WG366793CCV4	CCV	07/01/14 12:34	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB4	CCB	07/01/14 12:39				U	ng/L		-0.5	0.5			
WG366793CCV5	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB5	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L19107***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.01998		.01802	mg/L	90.2	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.0015	0.0015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.0502		.04708	mg/L	93.8	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.0502	.0196	.07132	mg/L	103	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.0502	.0196	.07263	mg/L	105.6	70	130	1.82	20	
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.01998		.01797	mg/L	89.9	90	110			
WG367481ICB	ICB	07/15/14 0:19				U	mg/L		-0.0015	0.0015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.0502		.04726	mg/L	94.1	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.0502	.0115	.05883	mg/L	94.3	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.0502	.0115	.06165	mg/L	99.9	70	130	4.68	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.01998		.01798	mg/L	90	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0015	0.0015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.0011	0.0011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0502		.04559	mg/L	90.8	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0502	U	.04641	mg/L	92.5	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0502	U	.04702	mg/L	93.7	70	130	1.31	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04748	mg/L	95	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0018	0.0018			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04453	mg/L	89.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04239	mg/L	84.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04311	mg/L	86.2	70	130	1.68	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04943	mg/L	98.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0018	0.0018			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00132	0.00132			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05		.04846	mg/L	96.9	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05	.0036	.05109	mg/L	95	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05	.0036	.04914	mg/L	91.1	70	130	3.89	20	

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ACZ Project ID: ***L19107***

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367059													
WG367059ICV	ICV	07/05/14 14:41	WI140417-3	2.416		2.4	mg/L	99.3	90	110			
WG367059ICB	ICB	07/05/14 14:42				U	mg/L		-0.06	0.06			
WG367059LFB1	LFB	07/05/14 14:45	WI140215-3	2		1.985	mg/L	99.3	90	110			
WG367059LFB2	LFB	07/05/14 15:19	WI140215-3	2		2.059	mg/L	103	90	110			
L19106-02AS	AS	07/05/14 15:22	WI140215-3	2	1.13	3.019	mg/L	94.5	90	110			
L19106-03DUP	DUP	07/05/14 15:26			1.93	1.918	mg/L				0.6	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366993													
WG366993LFB1	LFB	07/02/14 16:52	WI140113-8	1		.977	mg/L	97.7	90	110			
L19014-01AS	AS	07/02/14 16:54	WI140113-8	1	.05	1.032	mg/L	98.2	90	110			
L19107-01DUP	DUP	07/02/14 16:57			U	U	mg/L				0	20	RA
WG366993LFB2	LFB	07/02/14 17:24	WI140113-8	1		.953	mg/L	95.3	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW1	LCSW	07/01/14 19:07	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366884LCSW4	LCSW	07/01/14 23:19	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
WG366884LCSW7	LCSW	07/02/14 3:10	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
L19111-01DUP	DUP	07/02/14 5:18			8.2	8.24	units				0.5	20	
WG366884LCSW10	LCSW	07/02/14 7:06	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
WG366884LCSW13	LCSW	07/02/14 10:44	PCN45265	5.99		6.07	units	101.3	5.89	6.09			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367220													
WG367044LRB	LRB	07/09/14 0:31				U	mg/L		-0.03	0.03			
WG367044LFB	LFB	07/09/14 0:33	WI140701-2	.5		.462	mg/L	92.4	90	110			
L19033-11LFM	LFM	07/09/14 0:51	WI140701-2	.5	.01	.491	mg/L	96.2	90	110			
L19033-13DUP	DUP	07/09/14 0:53			.1	.096	mg/L				4.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	20		19.69	mg/L	98.5	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	99.99364		102	mg/L	102	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	99.99364	9	111.1	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	99.99364	9	111.3	mg/L	102.3	85	115	0.18	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	20		19.54	mg/L	97.7	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	99.99364		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	99.99364	5.7	108.4	mg/L	102.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	99.99364	5.7	107.6	mg/L	101.9	70	130	0.74	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	99.99364	4.1	106.4	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	99.99364	4.1	107.7	mg/L	103.6	70	130	1.21	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366769													
WG366769PBW	PBW	06/30/14 1:05				U	mg/L		-20	20			
WG366769LCSW	LCSW	06/30/14 1:07	PCN46080	260		240	mg/L	92.3	80	120			
L19107-01DUP	DUP	06/30/14 1:59			380	392	mg/L				3.1	10	
WG366932													
WG366932PBW	PBW	07/02/14 10:25				U	mg/L		-20	20			
WG366932LCSW	LCSW	07/02/14 10:26	PCN46081	260		260	mg/L	100	80	120			
L19108-01DUP	DUP	07/02/14 10:48			370	372	mg/L				0.5	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366814													
WG366814PBW	PBW	07/01/14 8:20				U	mg/L		-15	15			
WG366814LCSW	LCSW	07/01/14 8:22	PCN46080	160		138	mg/L	86.3	80	120			
L19107-03DUP	DUP	07/01/14 9:09			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.02	mg/L	101	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0009	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1.0009	U	1.07	mg/L	106.9	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0009	U	1.05	mg/L	104.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05185	mg/L	103.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.0493	mg/L	98.5	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0046	.0538	mg/L	98.3	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0046	.05636	mg/L	103.4	70	130	4.65	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05135	mg/L	102.7	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.0489	mg/L	97.7	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04751	mg/L	94.9	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04894	mg/L	97.8	70	130	2.97	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.02002		.01964	mg/L	98.1	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.00015	0.00015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.01002		.009691	mg/L	96.7	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.01002	U	.009192	mg/L	91.7	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.01002	U	.009334	mg/L	93.2	70	130	1.53	20	
WG367481													
WG367481ICV	ICV	07/15/14 0:16	MS140513-1	.02002		.01997	mg/L	99.8	90	110			
WG367481ICB	ICB	07/15/14 0:19				U	mg/L		-0.00015	0.00015			
WG367481LFB	LFB	07/15/14 0:23	MS140625-3	.01002		.009948	mg/L	99.3	85	115			
L19187-01AS	AS	07/15/14 0:50	MS140625-3	.01002	.00009	.00941	mg/L	93	70	130			
L19187-01ASD	ASD	07/15/14 1:00	MS140625-3	.01002	.00009	.01051	mg/L	104	70	130	11.04	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.02002		.01999	mg/L	99.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.00015	0.00015			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00011	0.00011			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.01002		.009565	mg/L	95.5	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.01002	U	.009543	mg/L	95.2	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.01002	U	.009678	mg/L	96.6	70	130	1.4	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		98.24	mg/L	98.2	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	100.0393		102.3	mg/L	102.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	100.0393	42.7	142.8	mg/L	100.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	100.0393	42.7	143.2	mg/L	100.5	85	115	0.28	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		97.84	mg/L	97.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	100.0393		102.1	mg/L	102.1	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	100.0393	108	210.4	mg/L	102.4	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	100.0393	108	211.2	mg/L	103.2	70	130	0.38	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	100.0393	18.1	120.7	mg/L	102.6	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	100.0393	18.1	122	mg/L	103.9	70	130	1.07	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9738	mg/L	98.7	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.5175	mg/L	103.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.15	.6609	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.15	.661	mg/L	102.1	85	115	0.02	20	

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ACZ Project ID: ***L19107***

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9695	mg/L	98.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.514	mg/L	102.7	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.5235	mg/L	104.6	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.5187	mg/L	103.6	70	130	0.92	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.241	.753	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.241	.762	mg/L	104.1	70	130	1.19	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	44	73.8	mg/L	99.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05394	mg/L	107.9	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0502		.05083	mg/L	101.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0502	U	.04755	mg/L	94.7	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0502	U	.04801	mg/L	95.6	70	130	0.96	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05344	mg/L	106.9	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.0502		.0504	mg/L	100.4	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.0502	U	.05094	mg/L	101.5	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.0502	U	.0507	mg/L	101	70	130	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.0501		.04624	mg/L	92.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04558	mg/L	91.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04273	mg/L	85.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04222	mg/L	84.4	70	130	1.2	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.0501		.04872	mg/L	97.2	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04837	mg/L	96.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04838	mg/L	96.7	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04899	mg/L	97.9	70	130	1.25	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2	mg/L	100	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1		1.027	mg/L	102.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1	U	1.022	mg/L	102.2	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1	U	1.025	mg/L	102.5	85	115	0.29	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9955	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1		1.035	mg/L	103.5	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	1	U	1.041	mg/L	104.1	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	1	U	1.032	mg/L	103.2	70	130	0.87	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1	U	1.025	mg/L	102.5	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1	U	1.037	mg/L	103.7	70	130	1.16	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0521	mg/L	104.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04943	mg/L	98.8	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0028	.0509	mg/L	96.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0028	.05116	mg/L	96.6	70	130	0.51	20	

SPF Water Engineering

ACZ Project ID: ***L19107***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.05026	mg/L	100.5	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0003	0.0003			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00022	0.00022			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.04885	mg/L	97.6	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.04911	mg/L	98.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04974	mg/L	99.4	70	130	1.27	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04879	mg/L	97.6	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04761	mg/L	95.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0416	.08924	mg/L	95.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0416	.08989	mg/L	96.5	70	130	0.73	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366984													
WG366984ICV	ICV	07/02/14 22:01	MS140513-1	.05		.04778	mg/L	95.6	90	110			
WG366984ICB	ICB	07/02/14 22:04				U	mg/L		-0.0006	0.0006			
WG366813LRB	LRB	07/02/14 22:07				U	mg/L		-0.00044	0.00044			
WG366813LFB	LFB	07/02/14 22:11	MS140625-3	.05005		.05011	mg/L	100.1	85	115			
L19103-03LFM	LFM	07/02/14 23:14	MS140625-3	.05005	U	.05011	mg/L	100.1	70	130			
L19103-03LFMD	LFMD	07/02/14 23:17	MS140625-3	.05005	U	.04798	mg/L	95.9	70	130	4.34	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.985	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.534	mg/L	106.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	U	.535	mg/L	106.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	U	.536	mg/L	107.1	85	115	0.19	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.944	mg/L	97.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.532	mg/L	106.3	85	115			
L19105-01LFM	LFM	07/03/14 14:13	II140611-2	.5005	U	.534	mg/L	106.7	70	130			
L19105-01LFMD	LFMD	07/03/14 14:16	II140611-2	.5005	U	.528	mg/L	105.5	70	130	1.13	20	
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	U	.521	mg/L	104.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	U	.529	mg/L	105.7	70	130	1.52	20	

SPF Water Engineering ACZ Project ID: ***L19107***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19107-01	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366814	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19107-02	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG366814	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19107***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19107-03	WG366984	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG366814	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19107-04	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19107
Date Received: 06/26/2014 09:49
Received By: mtb
Date Printed: 6/26/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the Analyses Requested and Relinquished Date:Time and ID Line 4 section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19903	4.2	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID:	L19107
Date Received:	06/26/2014 09:49
Received By:	mtb
Date Printed:	6/26/2014

L19107

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 2nd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	per AK QA QC						
Whiskey Spring	6/24/14 14:00	GW	8	X							
Government Corral	6/24/14 13:05	GW	8	X							
Prod-1	6/24/14 15:40	GW	8	X							
Cyanide Trip Blank	—	—	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/25/14 7:00	DPC	6/26/14 0940

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19107 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19108

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 26, 2014. This project has been assigned to ACZ's project number, L19108. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19108. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 11, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19108

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on June 26, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19108. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19108. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L19108-01***
Date Sampled: *06/24/14 16:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 11:24	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 13:04	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 12:38	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 10:36	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L19108-01***
Date Sampled: *06/24/14 16:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:53	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:53	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:27	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:21	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0262			mg/L	0.0002	0.001	07/07/14 19:27	msh
Arsenic, total	M200.8 ICP-MS	1	0.0278			mg/L	0.0002	0.001	07/09/14 18:21	pmc
Barium, dissolved	M200.7 ICP	1	0.057			mg/L	0.003	0.02	06/30/14 22:53	jjc
Barium, total	M200.7 ICP	1	0.056			mg/L	0.003	0.02	07/03/14 14:53	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:38	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:21	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:53	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:53	jjc
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	06/30/14 22:53	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/03/14 14:53	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:27	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:21	pmc
Calcium, dissolved	M200.7 ICP	1	55.5			mg/L	0.1	0.5	06/30/14 22:53	jjc
Calcium, total	M200.7 ICP	1	54.8			mg/L	0.1	0.5	07/03/14 14:53	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/07/14 19:27	msh
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	07/09/14 18:21	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	07/07/14 19:27	msh
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	07/09/14 18:21	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:27	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:26	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:53	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:53	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:53	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:53	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:27	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:21	pmc
Lithium, dissolved	M200.7 ICP	1	0.046			mg/L	0.008	0.04	06/30/14 22:53	jjc
Lithium, total	M200.7 ICP	1	0.047			mg/L	0.008	0.04	07/03/14 14:53	jjc
Magnesium, dissolved	M200.7 ICP	1	11.4			mg/L	0.2	1	06/30/14 22:53	jjc
Magnesium, total	M200.7 ICP	1	11.3			mg/L	0.2	1	07/03/14 14:53	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:27	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:21	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	07/01/14 17:46	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/01/14 12:54	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	07/10/14 12:38	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	07/09/14 18:21	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:27	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:21	pmc
Potassium, dissolved	M200.7 ICP	1	5.6			mg/L	0.2	1	06/30/14 22:53	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L19108-01***
Date Sampled: *06/24/14 16:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.5			mg/L	0.2	1	07/03/14 14:53	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:53	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:53	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0053			mg/L	0.0001	0.0003	07/07/14 19:27	msh
Selenium, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0001	0.0003	07/09/14 18:21	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:38	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:21	pmc
Sodium, dissolved	M200.7 ICP	1	34.4			mg/L	0.2	1	06/30/14 22:53	jjc
Sodium, total	M200.7 ICP	1	33.7			mg/L	0.2	1	07/03/14 14:53	jjc
Strontium, dissolved	M200.7 ICP	1	0.257			mg/L	0.005	0.03	06/30/14 22:53	jjc
Strontium, total	M200.7 ICP	1	0.252			mg/L	0.005	0.03	07/03/14 14:53	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:27	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:21	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:27	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:21	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:53	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:53	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	07/07/14 19:27	msh
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	07/09/14 18:21	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0372			mg/L	0.0002	0.001	07/07/14 19:27	msh
Vanadium, total	M200.8 ICP-MS	1	0.0442			mg/L	0.0002	0.001	07/09/14 18:21	pmc
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	06/30/14 22:53	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	07/03/14 14:53	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L19108-01***
Date Sampled: *06/24/14 16:15*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	174			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	175			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	14.8		*	mg/L	0.5	2.5	07/08/14 1:57	jlf
Conductivity @25C	SM2510B	1	511			umhos/cm	1	10	07/02/14 4:31	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:26	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:20	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.46		*	mg/L	0.05	0.25	07/08/14 1:57	jlf
Hardness as CaCO3	SM2340B - Calculation		186			mg/L	0.8	4	07/11/14 11:59	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:31	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:09	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	23			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B		mg/L	0.01	0.05	07/09/14 1:01	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	370	H	*	mg/L	10	20	07/02/14 10:46	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:26	eaa
Sulfate	M300.0 - Ion Chromatography	1	45.8		*	mg/L	0.5	2.5	07/08/14 1:57	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L19108-02***
Date Sampled: *06/24/14 12:10*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 11:38	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 13:14	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 12:49	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 10:47	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L19108-02***
Date Sampled: *06/24/14 12:10*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 22:57	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 14:56	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:30	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:24	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0066			mg/L	0.0002	0.001	07/07/14 19:30	msh
Arsenic, total	M200.8 ICP-MS	1	0.0071			mg/L	0.0002	0.001	07/09/14 18:24	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	06/30/14 22:57	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/14 14:56	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:41	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:24	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 22:57	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 14:56	jjc
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	06/30/14 22:57	jjc
Boron, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	07/03/14 14:56	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:30	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:24	pmc
Calcium, dissolved	M200.7 ICP	1	45.3			mg/L	0.1	0.5	06/30/14 22:57	jjc
Calcium, total	M200.7 ICP	1	45			mg/L	0.1	0.5	07/03/14 14:56	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	07/07/14 19:30	msh
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/09/14 18:24	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	07/07/14 19:30	msh
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/09/14 18:24	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:30	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:29	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:57	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:56	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 22:57	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 14:56	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:30	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:24	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	06/30/14 22:57	jjc
Lithium, total	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	07/03/14 14:56	jjc
Magnesium, dissolved	M200.7 ICP	1	9.6			mg/L	0.2	1	06/30/14 22:57	jjc
Magnesium, total	M200.7 ICP	1	9.6			mg/L	0.2	1	07/03/14 14:56	jjc
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:30	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:24	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	07/01/14 18:01	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/01/14 12:59	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.003	07/10/14 12:41	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	07/09/14 18:24	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:30	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:24	pmc
Potassium, dissolved	M200.7 ICP	1	4.9			mg/L	0.2	1	06/30/14 22:57	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L19108-02***
Date Sampled: *06/24/14 12:10*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.9			mg/L	0.2	1	07/03/14 14:56	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 22:57	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 14:56	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0001	0.0003	07/07/14 19:30	msh
Selenium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	07/09/14 18:24	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:41	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:24	pmc
Sodium, dissolved	M200.7 ICP	1	19.6			mg/L	0.2	1	06/30/14 22:57	jjc
Sodium, total	M200.7 ICP	1	19.5			mg/L	0.2	1	07/03/14 14:56	jjc
Strontium, dissolved	M200.7 ICP	1	0.196			mg/L	0.005	0.03	06/30/14 22:57	jjc
Strontium, total	M200.7 ICP	1	0.193			mg/L	0.005	0.03	07/03/14 14:56	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:30	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:24	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:30	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:24	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 22:57	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 14:56	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/07/14 19:30	msh
Uranium, total	M200.8 ICP-MS	1	0.0036			mg/L	0.0001	0.0005	07/09/14 18:24	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0176			mg/L	0.0002	0.001	07/07/14 19:30	msh
Vanadium, total	M200.8 ICP-MS	1	0.0208			mg/L	0.0002	0.001	07/09/14 18:24	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 22:57	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 14:56	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L19108-02***
Date Sampled: *06/24/14 12:10*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	124			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1	3	B		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	127			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	10.8		*	mg/L	0.5	2.5	07/08/14 2:15	jlf
Conductivity @25C	SM2510B	1	393			umhos/cm	1	10	07/02/14 4:40	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:27	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:21	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.35		*	mg/L	0.05	0.25	07/08/14 2:15	jlf
Hardness as CaCO3	SM2340B - Calculation		153			mg/L	0.8	4	07/11/14 11:59	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	3.03			mg/L	0.02	0.1	07/05/14 15:32	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:10	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B		mg/L	0.01	0.05	07/09/14 1:02	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280	H	*	mg/L	10	20	07/02/14 10:50	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:27	eaa
Sulfate	M300.0 - Ion Chromatography	1	18.2		*	mg/L	0.5	2.5	07/08/14 2:15	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L19108-03***
Date Sampled: *06/24/14 10:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 11:52	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 13:24	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:04	tcd
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:01	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 10:58	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L19108-03***
Date Sampled: *06/24/14 10:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	06/30/14 23:00	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 15:05	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/07/14 19:33	msh
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:34	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0258			mg/L	0.0002	0.001	07/07/14 19:33	msh
Arsenic, total	M200.8 ICP-MS	1	0.0268			mg/L	0.0002	0.001	07/09/14 18:34	pmc
Barium, dissolved	M200.7 ICP	1	0.009	B		mg/L	0.003	0.02	06/30/14 23:00	jjc
Barium, total	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	07/03/14 15:05	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:44	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:34	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	06/30/14 23:00	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:05	jjc
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	06/30/14 23:00	jjc
Boron, total	M200.7 ICP	1	0.10			mg/L	0.01	0.05	07/03/14 15:05	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:33	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:34	pmc
Calcium, dissolved	M200.7 ICP	1	31.4			mg/L	0.1	0.5	06/30/14 23:00	jjc
Calcium, total	M200.7 ICP	1	31.5			mg/L	0.1	0.5	07/03/14 15:05	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/07/14 19:33	msh
Chromium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.002	07/09/14 18:34	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00034			mg/L	0.00005	0.0003	07/07/14 19:33	msh
Cobalt, total	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	07/09/14 18:34	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/07/14 19:33	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:36	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 23:00	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:05	jjc
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/30/14 23:00	jjc
Iron, total	M200.7 ICP	1	0.06			mg/L	0.02	0.05	07/03/14 15:05	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:33	msh
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:34	pmc
Lithium, dissolved	M200.7 ICP	1	0.037	B		mg/L	0.008	0.04	06/30/14 23:00	jjc
Lithium, total	M200.7 ICP	1	0.038	B		mg/L	0.008	0.04	07/03/14 15:05	jjc
Magnesium, dissolved	M200.7 ICP	1	10.1			mg/L	0.2	1	06/30/14 23:00	jjc
Magnesium, total	M200.7 ICP	1	10.1			mg/L	0.2	1	07/03/14 15:05	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0487			mg/L	0.0005	0.003	07/07/14 19:33	msh
Manganese, total	M200.8 ICP-MS	1	0.0546			mg/L	0.0005	0.003	07/09/14 18:34	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	5		U	*	ng/L	1	3	07/01/14 18:06	las
Mercury, total	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	07/01/14 13:04	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0092			mg/L	0.0005	0.003	07/10/14 12:44	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0093			mg/L	0.0005	0.003	07/09/14 18:34	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/07/14 19:33	msh
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:34	pmc
Potassium, dissolved	M200.7 ICP	1	8			mg/L	0.2	1	06/30/14 23:00	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L19108-03***
Date Sampled: *06/24/14 10:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	8			mg/L	0.2	1	07/03/14 15:05	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/30/14 23:00	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:05	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	07/07/14 19:33	msh
Selenium, total	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	07/09/14 18:34	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 12:44	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:34	pmc
Sodium, dissolved	M200.7 ICP	1	61.6			mg/L	0.2	1	06/30/14 23:00	jjc
Sodium, total	M200.7 ICP	1	61.6			mg/L	0.2	1	07/03/14 15:05	jjc
Strontium, dissolved	M200.7 ICP	1	0.169			mg/L	0.005	0.03	06/30/14 23:00	jjc
Strontium, total	M200.7 ICP	1	0.167			mg/L	0.005	0.03	07/03/14 15:05	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/07/14 19:33	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:34	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/07/14 19:33	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:34	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/30/14 23:00	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 15:05	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	07/07/14 19:33	msh
Uranium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	07/09/14 18:34	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0187			mg/L	0.0002	0.001	07/07/14 19:33	msh
Vanadium, total	M200.8 ICP-MS	1	0.0222			mg/L	0.0002	0.001	07/09/14 18:34	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/30/14 23:00	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:05	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: NEGRO ROCK CREEK

ACZ Sample ID: ***L19108-03***
Date Sampled: *06/24/14 10:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	135			mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1	135			mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	17.6		*	mg/L	0.5	2.5	07/08/14 2:33	jlf
Conductivity @25C	SM2510B	1	527			umhos/cm	1	10	07/02/14 4:49	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:28	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:22	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.66		*	mg/L	0.05	0.25	07/08/14 2:33	jlf
Hardness as CaCO3	SM2340B - Calculation		120			mg/L	0.8	4	07/11/14 11:59	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.24			mg/L	0.02	0.1	07/05/14 15:33	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:11	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.07			mg/L	0.01	0.05	07/09/14 1:03	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	360	H	*	mg/L	10	20	07/02/14 10:52	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:29	eaa
Sulfate	M300.0 - Ion Chromatography	1	72.1		*	mg/L	0.5	2.5	07/08/14 2:33	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L19108-04***
Date Sampled: *06/24/14 13:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 12:07	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 13:33	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/07/14 10:05	tcd
Total Hot Plate Digestion	M200.2 ICP-MS								07/02/14 11:08	las
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:12	jjc

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 15:09	jjc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/09/14 18:38	pmc
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/09/14 18:38	pmc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	07/03/14 15:09	jjc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:38	pmc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:09	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:09	jjc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:38	pmc
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	07/03/14 15:09	jjc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/09/14 18:38	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:38	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 19:39	pmc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:09	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/03/14 15:09	jjc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:38	pmc
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	07/03/14 15:09	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 15:09	jjc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:38	pmc
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/01/14 13:09	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/09/14 18:38	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/09/14 18:38	pmc
Potassium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 15:09	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:09	jjc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/09/14 18:38	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/09/14 18:38	pmc
Sodium, total	M200.7 ICP	1		U		mg/L	0.2	1	07/03/14 15:09	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 15:09	jjc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:38	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/09/14 18:38	pmc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 15:09	jjc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/09/14 18:38	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0002	0.001	07/09/14 18:38	pmc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:09	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L19108-04***
Date Sampled: *06/24/14 13:55*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	abd
Total Alkalinity		1		U		mg/L	2	20	07/02/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.5	2.5	07/08/14 3:09	jlf
Conductivity @25C	SM2510B	1	1	B		umhos/cm	1	10	07/02/14 4:56	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:29	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:23	pjb
Fluoride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.05	0.25	07/08/14 3:09	jlf
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/05/14 15:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 16:12	bsu
pH (lab)	SM4500H+ B									
pH		1	6.3	H		units	0.1	0.1	07/02/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U		mg/L	0.01	0.05	07/09/14 1:04	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		UH	*	mg/L	10	20	07/02/14 10:54	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	06/30/14 15:31	eaa
Sulfate	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	07/08/14 3:09	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: CYANIDE TRIP BLANK

ACZ Sample ID: ***L19108-05***
Date Sampled: *06/24/14 00:00*
Date Received: *06/26/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/03/14 12:21	mss2
Cyanide, WAD	SM4500-CN I- distillation								07/03/14 13:43	mss2

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 0:30	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/04/14 1:24	pjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19108***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884PBW1	PBW	07/01/14 19:03				U	mg/L		-20	20			
WG366884LCSW3	LCSW	07/01/14 19:22	WC140630-	820.0001		841.6	mg/L	102.6	90	110			
WG366884LCSW6	LCSW	07/01/14 23:36	WC140630-	820.0001		826.8	mg/L	100.8	90	110			
WG366884PBW2	PBW	07/01/14 23:44				U	mg/L		-20	20			
WG366884LCSW9	LCSW	07/02/14 3:26	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW3	PBW	07/02/14 3:35				U	mg/L		-20	20			
L19111-01DUP	DUP	07/02/14 5:18			432	446.4	mg/L				3.3	20	
WG366884LCSW12	LCSW	07/02/14 7:22	WC140630-	820.0001		830.4	mg/L	101.3	90	110			
WG366884PBW4	PBW	07/02/14 7:31				2.1	mg/L		-20	20			
WG366884LCSW15	LCSW	07/02/14 11:01	WC140630-	820.0001		831.9	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.006	mg/L	100.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.09	0.09			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0011		1.101	mg/L	110	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0011	U	1.091	mg/L	109	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0011	U	1.093	mg/L	109.2	85	115	0.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.09	0.09			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.066	0.066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0011		1.09	mg/L	108.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0011	U	1.105	mg/L	110.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0011	U	1.112	mg/L	111.1	70	130	0.63	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.02002		.01968	mg/L	98.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0012	0.0012			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.01		.00986	mg/L	98.6	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.01	U	.00908	mg/L	90.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.01	U	.00891	mg/L	89.1	70	130	1.89	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.02002		.02018	mg/L	100.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0012	0.0012			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00088	0.00088			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.01		.01083	mg/L	108.3	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.01	.0004	.01131	mg/L	109.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.01	.0004	.01124	mg/L	108.4	70	130	0.62	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05303	mg/L	106.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04817	mg/L	96.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.038	.08752	mg/L	98.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.038	.08786	mg/L	99.5	70	130	0.39	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05318	mg/L	106.4	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0006	0.0006			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00044	0.00044			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.05519	mg/L	110.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	.0268	.07832	mg/L	102.8	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	.0268	.07833	mg/L	102.9	70	130	0.01	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9683	mg/L	98.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.009	0.009			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5		.5041	mg/L	100.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5	.005	.5081	mg/L	100.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5	.005	.5103	mg/L	101.1	85	115	0.43	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.976	mg/L	98.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.009	0.009			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0066	0.0066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5		.5114	mg/L	102.3	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5	.023	.5301	mg/L	101.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5	.023	.5346	mg/L	102.3	70	130	0.85	20	

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ACZ Project ID: ***L19108***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.05		.04782	mg/L	95.6	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.00015	0.00015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.05005		.04925	mg/L	98.4	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.05005	U	.04693	mg/L	93.8	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.05005	U	.04657	mg/L	93	70	130	0.77	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05115	mg/L	102.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05167	mg/L	103.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.05111	mg/L	102.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.05162	mg/L	103.1	70	130	0.99	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.007	mg/L	100.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.12	0.12			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.999		1.044	mg/L	104.5	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.999	U	1.023	mg/L	102.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.999	U	1.019	mg/L	102	85	115	0.39	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.003	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.12	0.12			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.088	0.088			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.999		1.034	mg/L	103.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.999	U	1.03	mg/L	103.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.999	U	1.046	mg/L	104.7	70	130	1.54	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.015	mg/L	100.8	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.525	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.11	.625	mg/L	102.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.11	.625	mg/L	102.9	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.004	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.506	mg/L	101.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.03	.549	mg/L	103.7	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.03	.549	mg/L	103.7	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05057	mg/L	101.1	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.0493	mg/L	98.4	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	U	.0447	mg/L	89.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	U	.04432	mg/L	88.5	70	130	0.85	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.04962	mg/L	99.2	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.04942	mg/L	98.6	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	U	.04846	mg/L	96.7	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	U	.04787	mg/L	95.5	70	130	1.22	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		99.28	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	67.98099		73.58	mg/L	108.2	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	67.98099	26.8	99.64	mg/L	107.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	67.98099	26.8	99.62	mg/L	107.1	85	115	0.02	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		99.24	mg/L	99.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	67.98099		74.57	mg/L	109.7	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	67.98099	48.2	121.2	mg/L	107.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	67.98099	48.2	123.2	mg/L	110.3	70	130	1.64	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	10.5	41.5	mg/L	103.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			
L19147-01DUP	DUP	07/08/14 18:31			2.23	2.22	mg/L				0.4	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	2.15	33.1	mg/L	103.2	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04858	mg/L	97.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04588	mg/L	91.7	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0008	.04591	mg/L	90.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0008	.04657	mg/L	91.4	70	130	1.43	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05067	mg/L	101.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04994	mg/L	99.8	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04846	mg/L	96.8	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.04908	mg/L	98.1	70	130	1.27	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0494	mg/L	98.8	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.00015	0.00015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.05022	mg/L	100.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0003	.04704	mg/L	93.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0003	.04731	mg/L	93.9	70	130	0.57	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.04989	mg/L	99.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05064	mg/L	101.2	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.00008	.04872	mg/L	97.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.00008	.04874	mg/L	97.2	70	130	0.04	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW2	LCSW	07/01/14 19:09	PCN44568	1408.8		1433.3	umhos/cm	101.7	90	110			
WG366884LCSW5	LCSW	07/01/14 23:21	PCN44568	1408.8		1422.1	umhos/cm	100.9	90	110			
WG366884LCSW8	LCSW	07/02/14 3:12	PCN44568	1408.8		1403.9	umhos/cm	99.7	90	110			
L19111-01DUP	DUP	07/02/14 5:18			2070	2080	umhos/cm				0.5	20	
WG366884LCSW11	LCSW	07/02/14 7:08	PCN44568	1408.8		1391.7	umhos/cm	98.8	90	110			
WG366884LCSW14	LCSW	07/02/14 10:46	PCN44568	1408.8		1372.4	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04718	mg/L	94.4	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04354	mg/L	87.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04296	mg/L	85.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04345	mg/L	86.9	70	130	1.13	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367311													
WG367311ICV	ICV	07/10/14 19:01	MS140513-1	.05		.04899	mg/L	98	90	110			
WG367311ICB	ICB	07/10/14 19:04				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/10/14 19:06				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/10/14 19:09	MS140625-3	.05		.04703	mg/L	94.1	85	115			
L19105-03LFM	LFM	07/10/14 19:19	MS140625-3	.05	U	.04547	mg/L	90.9	70	130			
L19105-03LFMD	LFMD	07/10/14 19:21	MS140625-3	.05	U	.045	mg/L	90	70	130	1.04	20	
WG367077LRB	LRB	07/10/14 19:46				.00068	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/10/14 19:49	MS140625-3	.05		.04713	mg/L	94.3	85	115			

SPF Water Engineering

ACZ Project ID: ***L19108***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367004LRB	LRB	07/04/14 0:16				U	mg/L		-0.003	0.003			
WG367004LFB	LFB	07/04/14 0:17	WI140702-2	.2		.1927	mg/L	96.4	90	110			
L19106-02LFM	LFM	07/04/14 0:19	WI140702-2	.2	U	.1934	mg/L	96.7	90	110			
L19106-03DUP	DUP	07/04/14 0:20			U	U	mg/L				0	20	RA
L19108-05LFM	LFM	07/04/14 0:31	WI140702-2	.2	U	.1986	mg/L	99.3	90	110			
L19117-01DUP	DUP	07/04/14 0:32			U	U	mg/L				0	20	RA

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367056													
WG367056ICV	ICV	07/04/14 0:14	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367056ICB	ICB	07/04/14 0:15				U	mg/L		-0.003	0.003			
WG367057													
WG367029LRB	LRB	07/04/14 1:07				U	mg/L		-0.003	0.003			
WG367029LFB	LFB	07/04/14 1:08	WI140702-4	.2		.18	mg/L	90	90	110			
L19105-01LFM	LFM	07/04/14 1:10	WI140702-4	.2	U	.1625	mg/L	81.3	90	110			M2
L19105-02DUP	DUP	07/04/14 1:11			U	U	mg/L				0	20	RA
L19176-06LFM	LFM	07/04/14 1:30	WI140702-4	.2	U	.1728	mg/L	86.4	90	110			M2
L19176-07DUP	DUP	07/04/14 1:32			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	1.5	.62	2.18	mg/L	104	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L19147-01DUP	DUP	07/08/14 18:31			.37	.37	mg/L				0	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	1.5	.31	1.84	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.06	mg/L	103	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.001		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.001	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.001	U	1.04	mg/L	103.9	85	115	0.96	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.001		1.04	mg/L	103.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.001	U	1.03	mg/L	102.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.001	U	1.03	mg/L	102.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.966	mg/L	98.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.06	0.06			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0014		1.029	mg/L	102.8	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0014	U	1.021	mg/L	102	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115	0.29	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.965	mg/L	98.3	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.06	0.06			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.044	0.044			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0014		1.046	mg/L	104.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0014	U	1.021	mg/L	102	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0014	U	1.044	mg/L	104.3	70	130	2.23	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04985	mg/L	99.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04765	mg/L	95.2	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04162	mg/L	83.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04194	mg/L	83.8	70	130	0.77	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05152	mg/L	103	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04887	mg/L	97.6	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04932	mg/L	98.5	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.04962	mg/L	99.1	70	130	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9912	mg/L	99.6	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.024	0.024			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.002		1.005	mg/L	100.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.002	.013	.999	mg/L	98.4	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.002	.013	1.009	mg/L	99.4	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9815	mg/L	99.1	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.024	0.024			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0176	0.0176			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.002		1.01	mg/L	100.8	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.002	.018	1.023	mg/L	100.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.002	.018	1.037	mg/L	101.7	70	130	1.36	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		96.44	mg/L	96.4	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	50.00131		50.21	mg/L	100.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	50.00131	15	64.79	mg/L	99.6	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	50.00131	15	64.82	mg/L	99.6	85	115	0.05	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		96.61	mg/L	96.6	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	50.00131		51.21	mg/L	102.4	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	50.00131	14.5	65.07	mg/L	101.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	50.00131	14.5	65.85	mg/L	102.7	70	130	1.19	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0015	0.0015			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0501		.04955	mg/L	98.9	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0501	.0018	.04832	mg/L	92.9	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0501	.0018	.0488	mg/L	93.8	70	130	0.99	20	

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ACZ Project ID: ***L19108***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05216	mg/L	104.3	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0501		.05004	mg/L	99.9	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0501	U	.04919	mg/L	98.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0501	U	.0497	mg/L	99.2	70	130	1.03	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
L19108-01MS	MS	07/01/14 17:51	HG5XPREP	50	U	9.4	ng/L	94	71	125			
L19108-01MSD	MSD	07/01/14 17:56	HG5XPREP	50	U	9.5	ng/L	95	71	125	1.06	24	
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L19108***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366793													
WG366793CCV1	CCV	07/01/14 9:39	HG140624-4	10		9.66	ng/L	96.6	76.5	123.4			
WG366793CCB1	CCB	07/01/14 9:44				U	ng/L		-0.5	0.5			
WG366793PQV	PQV	07/01/14 9:49	HG140624-6	.5		.59	ng/L	118	70	130			
WG366793LFB	LFB	07/01/14 9:54	HG140624-5	2		1.83	ng/L	91.5	71	125			
WG366793CCV2	CCV	07/01/14 10:30	HG140624-4	10		9.99	ng/L	99.9	76.5	123.4			
WG366793CCB2	CCB	07/01/14 10:35				U	ng/L		-0.5	0.5			
WG366793CCV3	CCV	07/01/14 11:20	HG140624-4	10		10	ng/L	100	76.5	123.4			
WG366793CCB3	CCB	07/01/14 11:25				U	ng/L		-0.5	0.5			
L19107-01MS	MS	07/01/14 12:24	HG140624-5	2	U	2.08	ng/L	104	71	125			
L19107-01MSD	MSD	07/01/14 12:29	HG140624-5	2	U	2.06	ng/L	103	71	125	0.97	24	
WG366793CCV4	CCV	07/01/14 12:34	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB4	CCB	07/01/14 12:39				U	ng/L		-0.5	0.5			
WG366793CCV5	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366793CCB5	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.01998		.01802	mg/L	90.2	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.0015	0.0015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.0502		.04708	mg/L	93.8	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.0502	.0196	.07132	mg/L	103	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.0502	.0196	.07263	mg/L	105.6	70	130	1.82	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.01998		.01835	mg/L	91.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0502		.04825	mg/L	96.1	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0502	.0033	.05198	mg/L	97	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0502	.0033	.05236	mg/L	97.7	70	130	0.73	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04748	mg/L	95	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0018	0.0018			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05		.04453	mg/L	89.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05	U	.04239	mg/L	84.8	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05	U	.04311	mg/L	86.2	70	130	1.68	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05168	mg/L	103.4	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0018	0.0018			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00132	0.00132			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05		.04999	mg/L	100	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05	U	.04781	mg/L	95.6	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05	U	.04731	mg/L	94.6	70	130	1.05	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367059													
WG367059ICV	ICV	07/05/14 14:41	WI140417-3	2.416		2.4	mg/L	99.3	90	110			
WG367059ICB	ICB	07/05/14 14:42				U	mg/L		-0.06	0.06			
WG367059LFB1	LFB	07/05/14 14:45	WI140215-3	2		1.985	mg/L	99.3	90	110			
WG367059LFB2	LFB	07/05/14 15:19	WI140215-3	2		2.059	mg/L	103	90	110			
L19106-02AS	AS	07/05/14 15:22	WI140215-3	2	1.13	3.019	mg/L	94.5	90	110			
L19106-03DUP	DUP	07/05/14 15:26			1.93	1.918	mg/L				0.6	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366971													
WG366971LFB1	LFB	07/02/14 15:11	WI140113-8	1		1.016	mg/L	101.6	90	110			
WG366971LFB2	LFB	07/02/14 16:00	WI140113-8	1		.969	mg/L	96.9	90	110			
L19106-01AS	AS	07/02/14 16:03	WI140113-8	1	U	.985	mg/L	98.5	90	110			
L19106-02DUP	DUP	07/02/14 16:05			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366884													
WG366884LCSW1	LCSW	07/01/14 19:07	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366884LCSW4	LCSW	07/01/14 23:19	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
WG366884LCSW7	LCSW	07/02/14 3:10	PCN45265	5.99		6.06	units	101.2	5.89	6.09			
L19111-01DUP	DUP	07/02/14 5:18			8.2	8.24	units				0.5	20	
WG366884LCSW10	LCSW	07/02/14 7:06	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
WG366884LCSW13	LCSW	07/02/14 10:44	PCN45265	5.99		6.07	units	101.3	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19108***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367220													
WG367044LRB	LRB	07/09/14 0:31				U	mg/L		-0.03	0.03			
WG367044LFB	LFB	07/09/14 0:33	WI140701-2	.5		.462	mg/L	92.4	90	110			
L19033-11LFM	LFM	07/09/14 0:51	WI140701-2	.5	.01	.491	mg/L	96.2	90	110			
L19033-13DUP	DUP	07/09/14 0:53			.1	.096	mg/L				4.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	20		19.69	mg/L	98.5	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	99.99364		102	mg/L	102	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	99.99364	9	111.1	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	99.99364	9	111.3	mg/L	102.3	85	115	0.18	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	20		19.54	mg/L	97.7	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	99.99364		102.1	mg/L	102.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	99.99364	4.1	106.4	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	99.99364	4.1	107.7	mg/L	103.6	70	130	1.21	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366932													
WG366932PBW	PBW	07/02/14 10:25				U	mg/L		-20	20			
WG366932LCSW	LCSW	07/02/14 10:26	PCN46081	260		260	mg/L	100	80	120			
L19108-01DUP	DUP	07/02/14 10:48			370	372	mg/L				0.5	10	
L19122-02DUP	DUP	07/02/14 11:09			U	U	mg/L				0	10	RA

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366744													
WG366744PBW	PBW	06/30/14 14:55				U	mg/L		-15	15			
WG366744LCSW	LCSW	06/30/14 14:56	PCN46084	160		144	mg/L	90	80	120			
L19121-03DUP	DUP	06/30/14 15:34			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L19108***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2.02	mg/L	101	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.3	0.3			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1.0009	U	1.05	mg/L	104.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0.95	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0009	U	1.05	mg/L	104.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05185	mg/L	103.7	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.0493	mg/L	98.5	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0046	.0538	mg/L	98.3	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0046	.05636	mg/L	103.4	70	130	4.65	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05207	mg/L	104	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0011	.04974	mg/L	97.2	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0011	.04952	mg/L	96.7	70	130	0.44	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.02002		.01964	mg/L	98.1	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.00015	0.00015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.01002		.009691	mg/L	96.7	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.01002	U	.009192	mg/L	91.7	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.01002	U	.009334	mg/L	93.2	70	130	1.53	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.02002		.01977	mg/L	98.8	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.00015	0.00015			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00011	0.00011			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.01002		.009615	mg/L	96	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.01002	U	.009348	mg/L	93.3	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.01002	U	.009246	mg/L	92.3	70	130	1.1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	100		98.24	mg/L	98.2	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.6	0.6			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	100.0393		102.3	mg/L	102.3	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	100.0393	42.7	142.8	mg/L	100.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	100.0393	42.7	143.2	mg/L	100.5	85	115	0.28	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		97.84	mg/L	97.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	100.0393		102.1	mg/L	102.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	100.0393	18.1	120.7	mg/L	102.6	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	100.0393	18.1	122	mg/L	103.9	70	130	1.07	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.9738	mg/L	98.7	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.5175	mg/L	103.4	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	.15	.6609	mg/L	102.1	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	.15	.661	mg/L	102.1	85	115	0.02	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9695	mg/L	98.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.514	mg/L	102.7	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.241	.753	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.241	.762	mg/L	104.1	70	130	1.19	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
L19105-04DUP	DUP	07/07/14 22:58			U	U	mg/L				0	20	RA
L19106-01AS	AS	07/07/14 23:34	WI140610-6	30	44	73.8	mg/L	99.3	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			
L19147-01DUP	DUP	07/08/14 18:31			23	22.9	mg/L				0.4	20	
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	14.9	45.8	mg/L	103	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.05394	mg/L	107.9	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.0502		.05083	mg/L	101.3	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.0502	U	.04755	mg/L	94.7	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.0502	U	.04801	mg/L	95.6	70	130	0.96	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05459	mg/L	109.2	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.0502		.05019	mg/L	100	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.0502	U	.05127	mg/L	102.1	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.0502	U	.05136	mg/L	102.3	70	130	0.18	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.0501		.04624	mg/L	92.3	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04558	mg/L	91.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	U	.04273	mg/L	85.4	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	U	.04222	mg/L	84.4	70	130	1.2	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.0501		.04959	mg/L	99	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05509	mg/L	110.1	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	U	.04974	mg/L	99.4	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	U	.05242	mg/L	104.7	70	130	5.25	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		2	mg/L	100	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.015	0.015			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	1		1.027	mg/L	102.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	1	U	1.022	mg/L	102.2	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	1	U	1.025	mg/L	102.5	85	115	0.29	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9955	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1		1.035	mg/L	103.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1	U	1.025	mg/L	102.5	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1	U	1.037	mg/L	103.7	70	130	1.16	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.0521	mg/L	104.2	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0003	0.0003			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04943	mg/L	98.8	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0028	.0509	mg/L	96.1	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0028	.05116	mg/L	96.6	70	130	0.51	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05136	mg/L	102.7	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0003	0.0003			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00022	0.00022			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.04828	mg/L	96.5	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0025	.05283	mg/L	100.6	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0025	.05285	mg/L	100.6	70	130	0.04	20	

SPF Water Engineering

ACZ Project ID: ***L19108***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367129													
WG367129ICV	ICV	07/07/14 17:57	MS140513-1	.05		.04879	mg/L	97.6	90	110			
WG367129ICB	ICB	07/07/14 18:00				U	mg/L		-0.0006	0.0006			
WG367129LFB	LFB	07/07/14 18:03	MS140625-3	.05005		.04761	mg/L	95.1	85	115			
L19106-01AS	AS	07/07/14 18:58	MS140625-3	.05005	.0416	.08924	mg/L	95.2	70	130			
L19106-01ASD	ASD	07/07/14 19:01	MS140625-3	.05005	.0416	.08989	mg/L	96.5	70	130	0.73	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367205													
WG367205ICV	ICV	07/09/14 17:48	MS140513-1	.05		.05107	mg/L	102.1	90	110			
WG367205ICB	ICB	07/09/14 17:51				U	mg/L		-0.0006	0.0006			
WG366912LRB	LRB	07/09/14 17:55				U	mg/L		-0.00044	0.00044			
WG366912LFB	LFB	07/09/14 17:58	MS140625-3	.05005		.05141	mg/L	102.7	85	115			
L19105-03LFM	LFM	07/09/14 18:11	MS140625-3	.05005	.0308	.08198	mg/L	102.3	70	130			
L19105-03LFMD	LFMD	07/09/14 18:14	MS140625-3	.05005	.0308	.08372	mg/L	105.7	70	130	2.1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366751													
WG366751ICV	ICV	06/30/14 21:14	II140512-2	2		1.985	mg/L	99.3	95	105			
WG366751ICB	ICB	06/30/14 21:20				U	mg/L		-0.03	0.03			
WG366751LFB	LFB	06/30/14 21:33	II140611-2	.5005		.534	mg/L	106.7	85	115			
L19106-01AS	AS	06/30/14 22:26	II140611-2	.5005	U	.535	mg/L	106.9	85	115			
L19106-01ASD	ASD	06/30/14 22:29	II140611-2	.5005	U	.536	mg/L	107.1	85	115	0.19	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.944	mg/L	97.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.532	mg/L	106.3	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	U	.521	mg/L	104.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	U	.529	mg/L	105.7	70	130	1.52	20	

SPF Water Engineering ACZ Project ID: ***L19108***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19108-01	WG366851	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19108-02	WG366851	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L19108***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19108-03	WG366851	Mercury, dissolved	M1631, Atomic Fluorescence	D1	Sample required dilution due to matrix.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19108-04	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366971	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366932	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366744	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L19108-05	WG367056	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19108
Date Received: 06/26/2014 09:50
Received By: mtb
Date Printed: 6/27/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	X		

A change was made in the # of Containers Line 4 section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19904	2.4	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID:	L19108
Date Received:	06/26/2014 09:50
Received By:	mtb
Date Printed:	6/27/2014

L19108

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 2nd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ QA QC
Deposit Stock Tank	6/24/14 16:15	GW	8	X	
Sagebrush Spring	6/24/14 12:10	GW	8	X	
Negro Rock Creek	6/24/14 10:55	GW	8	X	
Transfer Blank	6/24/14 13:55		6	X**	
Cyanide Trip Blank	NA		1		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

**note that Transfer Blank excludes diss. metals and diss. Mercury bottles/sample.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Erik Boe	6/25/14 7:00		6.26.14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19108 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19129

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 27, 2014. This project has been assigned to ACZ's project number, L19129. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19129. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 11, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19129

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on June 27, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19129. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19129. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L19129-01***
Date Sampled: *06/25/14 14:20*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 13:05	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 14:55	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 12:55	mpb
Total Hot Plate Digestion	M200.2 ICP								07/03/14 11:47	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 12:13	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L19129-01***
Date Sampled: *06/25/14 14:20*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/14 16:29	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/07/14 11:06	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	07/08/14 12:53	las
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	07/08/14 22:35	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0309			mg/L	0.0002	0.001	07/08/14 12:53	las
Arsenic, total	M200.8 ICP-MS	1	0.0302			mg/L	0.0002	0.001	07/08/14 22:35	pmc
Barium, dissolved	M200.7 ICP	1	0.029			mg/L	0.003	0.02	07/01/14 16:29	aeb
Barium, total	M200.7 ICP	1	0.029			mg/L	0.003	0.02	07/07/14 11:06	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 12:53	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:35	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:01	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 11:06	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/01/14 16:29	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/07/14 11:06	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:53	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:35	pmc
Calcium, dissolved	M200.7 ICP	1	45			mg/L	0.1	0.5	07/01/14 16:29	aeb
Calcium, total	M200.7 ICP	1	43.4			mg/L	0.1	0.5	07/07/14 11:06	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/08/14 12:53	las
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/08/14 22:35	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	07/08/14 12:53	las
Cobalt, total	M200.8 ICP-MS	1	0.00023	B		mg/L	0.00005	0.0003	07/08/14 22:35	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 12:53	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 22:35	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:29	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:06	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/14 16:29	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/07/14 11:06	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:53	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:35	pmc
Lithium, dissolved	M200.7 ICP	1	0.046			mg/L	0.008	0.04	07/01/14 16:29	aeb
Lithium, total	M200.7 ICP	1	0.047			mg/L	0.008	0.04	07/07/14 11:06	aeb
Magnesium, dissolved	M200.7 ICP	1	8.5			mg/L	0.2	1	07/01/14 16:29	aeb
Magnesium, total	M200.7 ICP	1	7.9			mg/L	0.2	1	07/07/14 11:06	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 12:54	msh
Manganese, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	07/08/14 22:35	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/01/14 17:01	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/08/14 13:42	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.003	07/08/14 12:53	las
Molybdenum, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0005	0.003	07/08/14 22:35	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 12:53	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 22:35	pmc
Potassium, dissolved	M200.7 ICP	1	6.1			mg/L	0.2	1	07/01/14 16:29	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L19129-01***
Date Sampled: *06/25/14 14:20*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.2	1	07/07/14 11:06	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:29	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:06	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0003	07/08/14 12:53	las
Selenium, total	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0003	07/08/14 22:35	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 12:53	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:35	pmc
Sodium, dissolved	M200.7 ICP	1	26.1			mg/L	0.2	1	07/01/14 16:29	aeb
Sodium, total	M200.7 ICP	1	25.1			mg/L	0.2	1	07/07/14 11:06	aeb
Strontium, dissolved	M200.7 ICP	1	0.209			mg/L	0.005	0.03	07/01/14 16:29	aeb
Strontium, total	M200.7 ICP	1	0.201			mg/L	0.005	0.03	07/07/14 11:06	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:53	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:35	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 12:53	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 22:35	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:29	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 11:06	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0042			mg/L	0.0001	0.0005	07/08/14 12:53	las
Uranium, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	07/08/14 22:35	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0198			mg/L	0.0002	0.001	07/08/14 12:53	las
Vanadium, total	M200.8 ICP-MS	1	0.0200			mg/L	0.0002	0.001	07/08/14 22:35	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:29	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/07/14 11:06	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L19129-01***
Date Sampled: *06/25/14 14:20*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	135		*	mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	3	B	*	mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	138		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	1	11.7		*	mg/L	0.5	2.5	07/08/14 3:26	jlf
Conductivity @25C	SM2510B	1	416		*	umhos/cm	1	10	07/02/14 20:56	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:01	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:36	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45		*	mg/L	0.05	0.25	07/08/14 3:26	jlf
Hardness as CaCO3	SM2340B - Calculation		147			mg/L	0.8	4	07/11/14 12:34	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.09		*	mg/L	0.02	0.1	07/09/14 0:23	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 17:31	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	21		*	C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 1:36	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290	H	*	mg/L	10	20	07/03/14 10:07	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/01/14 10:57	nml
Sulfate	M300.0 - Ion Chromatography	1	34.0		*	mg/L	0.5	2.5	07/08/14 3:26	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L19129-02***
Date Sampled: *06/25/14 15:30*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 13:15	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 15:00	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:09	mpb
Total Hot Plate Digestion	M200.2 ICP								07/03/14 11:59	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 12:24	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L19129-02***
Date Sampled: *06/25/14 15:30*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/14 16:32	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/07/14 11:10	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/08/14 12:56	las
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/08/14 22:38	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0366			mg/L	0.0002	0.001	07/08/14 12:56	las
Arsenic, total	M200.8 ICP-MS	1	0.0370			mg/L	0.0002	0.001	07/08/14 22:38	pmc
Barium, dissolved	M200.7 ICP	1	0.027			mg/L	0.003	0.02	07/01/14 16:32	aeb
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	07/07/14 11:10	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 12:56	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:38	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:11	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 11:10	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/01/14 16:32	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/07/14 11:10	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:56	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:38	pmc
Calcium, dissolved	M200.7 ICP	1	38.8			mg/L	0.1	0.5	07/01/14 16:32	aeb
Calcium, total	M200.7 ICP	1	37.6			mg/L	0.1	0.5	07/07/14 11:10	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	07/08/14 12:56	las
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/08/14 22:38	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	07/08/14 12:56	las
Cobalt, total	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	07/08/14 22:38	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 12:56	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 22:38	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:32	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:10	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/14 16:32	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/07/14 11:10	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:56	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:38	pmc
Lithium, dissolved	M200.7 ICP	1	0.043			mg/L	0.008	0.04	07/01/14 16:32	aeb
Lithium, total	M200.7 ICP	1	0.043			mg/L	0.008	0.04	07/07/14 11:10	aeb
Magnesium, dissolved	M200.7 ICP	1	7			mg/L	0.2	1	07/01/14 16:32	aeb
Magnesium, total	M200.7 ICP	1	6.5			mg/L	0.2	1	07/07/14 11:10	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 12:57	msh
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 22:38	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 17:06	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/08/14 13:57	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	07/08/14 12:56	las
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	07/08/14 22:38	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 12:56	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 22:38	pmc
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.2	1	07/01/14 16:32	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L19129-02***
Date Sampled: *06/25/14 15:30*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.8			mg/L	0.2	1	07/07/14 11:10	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:32	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:10	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0003	07/08/14 12:56	las
Selenium, total	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0003	07/08/14 22:38	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 12:56	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:38	pmc
Sodium, dissolved	M200.7 ICP	1	25.3			mg/L	0.2	1	07/01/14 16:32	aeb
Sodium, total	M200.7 ICP	1	24.6			mg/L	0.2	1	07/07/14 11:10	aeb
Strontium, dissolved	M200.7 ICP	1	0.199			mg/L	0.005	0.03	07/01/14 16:32	aeb
Strontium, total	M200.7 ICP	1	0.193			mg/L	0.005	0.03	07/07/14 11:10	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 12:56	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:38	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 12:56	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 22:38	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:32	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 11:10	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	07/08/14 12:56	las
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	07/08/14 22:38	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0189			mg/L	0.0002	0.001	07/08/14 12:56	las
Vanadium, total	M200.8 ICP-MS	1	0.0197			mg/L	0.0002	0.001	07/08/14 22:38	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:32	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/07/14 11:10	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L19129-02***
Date Sampled: *06/25/14 15:30*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	108		*	mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	2	B	*	mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	110		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	1	10.4		*	mg/L	0.5	2.5	07/08/14 3:44	jlf
Conductivity @25C	SM2510B	1	375		*	umhos/cm	1	10	07/02/14 21:05	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:02	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:37	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.45		*	mg/L	0.05	0.25	07/08/14 3:44	jlf
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	0.8	4	07/11/14 12:34	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.14		*	mg/L	0.02	0.1	07/09/14 0:24	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 17:32	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	21		*	C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 1:39	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270	H	*	mg/L	10	20	07/03/14 10:09	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	07/03/14 15:51	eaa
Sulfate	M300.0 - Ion Chromatography	1	36.5		*	mg/L	0.5	2.5	07/08/14 3:44	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L19129-03***
Date Sampled: *06/25/14 16:55*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 13:26	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 15:06	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:16	mpb
Total Hot Plate Digestion	M200.2 ICP								07/03/14 12:10	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 12:34	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L19129-03***
Date Sampled: *06/25/14 16:55*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/14 16:35	aeb
Aluminum, total	M200.7 ICP	1	0.22			mg/L	0.03	0.2	07/07/14 11:13	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/08/14 13:06	las
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	07/08/14 22:42	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0268			mg/L	0.0002	0.001	07/08/14 13:06	las
Arsenic, total	M200.8 ICP-MS	1	0.0268			mg/L	0.0002	0.001	07/08/14 22:42	pmc
Barium, dissolved	M200.7 ICP	1	0.055			mg/L	0.003	0.02	07/01/14 16:35	aeb
Barium, total	M200.7 ICP	1	0.057			mg/L	0.003	0.02	07/07/14 11:13	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:06	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:42	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:14	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 11:13	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	07/01/14 16:35	aeb
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/07/14 11:13	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:06	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:42	pmc
Calcium, dissolved	M200.7 ICP	1	39.3			mg/L	0.1	0.5	07/01/14 16:35	aeb
Calcium, total	M200.7 ICP	1	38.5			mg/L	0.1	0.5	07/07/14 11:13	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/08/14 13:06	las
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	07/08/14 22:42	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	07/08/14 13:06	las
Cobalt, total	M200.8 ICP-MS	1	0.00032			mg/L	0.00005	0.0003	07/08/14 22:42	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	07/08/14 13:06	las
Copper, total	M200.8 ICP-MS	1	0.0070			mg/L	0.0005	0.003	07/08/14 22:42	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:35	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:13	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/01/14 16:35	aeb
Iron, total	M200.7 ICP	1	0.22			mg/L	0.02	0.05	07/07/14 11:13	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:06	las
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	07/08/14 22:42	pmc
Lithium, dissolved	M200.7 ICP	1	0.052			mg/L	0.008	0.04	07/01/14 16:35	aeb
Lithium, total	M200.7 ICP	1	0.053			mg/L	0.008	0.04	07/07/14 11:13	aeb
Magnesium, dissolved	M200.7 ICP	1	6.5			mg/L	0.2	1	07/01/14 16:35	aeb
Magnesium, total	M200.7 ICP	1	6.2			mg/L	0.2	1	07/07/14 11:13	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/08/14 13:06	las
Manganese, total	M200.8 ICP-MS	1	0.0111			mg/L	0.0005	0.003	07/08/14 22:42	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/01/14 17:11	las
Mercury, total	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	07/08/14 14:02	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0005	0.003	07/08/14 13:06	las
Molybdenum, total	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	07/08/14 22:42	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 13:06	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 22:42	pmc
Potassium, dissolved	M200.7 ICP	1	7.2			mg/L	0.2	1	07/01/14 16:35	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L19129-03***
Date Sampled: *06/25/14 16:55*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.2			mg/L	0.2	1	07/07/14 11:13	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:35	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 11:13	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	07/08/14 13:06	las
Selenium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	07/08/14 22:42	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:06	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:42	pmc
Sodium, dissolved	M200.7 ICP	1	25.5			mg/L	0.2	1	07/01/14 16:35	aeb
Sodium, total	M200.7 ICP	1	24.8			mg/L	0.2	1	07/07/14 11:13	aeb
Strontium, dissolved	M200.7 ICP	1	0.250			mg/L	0.005	0.03	07/01/14 16:35	aeb
Strontium, total	M200.7 ICP	1	0.244			mg/L	0.005	0.03	07/07/14 11:13	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:06	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:42	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 13:06	las
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	07/08/14 22:42	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:35	aeb
Titanium, total	M200.7 ICP	1	0.009	B		mg/L	0.005	0.03	07/07/14 11:13	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0032			mg/L	0.0001	0.0005	07/08/14 13:06	las
Uranium, total	M200.8 ICP-MS	1	0.0031			mg/L	0.0001	0.0005	07/08/14 22:42	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0166			mg/L	0.0002	0.001	07/08/14 13:06	las
Vanadium, total	M200.8 ICP-MS	1	0.0170			mg/L	0.0002	0.001	07/08/14 22:42	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:35	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/07/14 11:13	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L19129-03***
Date Sampled: *06/25/14 16:55*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	115		*	mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	3	B	*	mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	118		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	1	9.23		*	mg/L	0.5	2.5	07/08/14 16:43	jlf
Conductivity @25C	SM2510B	1	372		*	umhos/cm	1	10	07/02/14 21:14	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:03	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:38	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.50		*	mg/L	0.05	0.25	07/08/14 16:43	jlf
Hardness as CaCO3	SM2340B - Calculation		125			mg/L	0.8	4	07/11/14 12:34	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.76		*	mg/L	0.02	0.1	07/09/14 0:26	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/02/14 17:34	bsu
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	21		*	C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 1:40	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	270	H	*	mg/L	10	20	07/03/14 10:11	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	2		UH	*	mg/L	10	40	07/03/14 15:53	eaa
Sulfate	M300.0 - Ion Chromatography	1	29.8		*	mg/L	0.5	2.5	07/08/14 16:43	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L19129-04***
Date Sampled: *06/25/14 14:30*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/08/14 14:07	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19129***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975PBW1	PBW	07/02/14 16:30				U	mg/L		-20	20			
WG366975LCSW3	LCSW	07/02/14 16:49	WC140630-	820.0001		798	mg/L	97.3	90	110			
WG366975LCSW6	LCSW	07/02/14 20:05	WC140630-	820.0001		824.4	mg/L	100.5	90	110			
WG366975PBW2	PBW	07/02/14 20:14				U	mg/L		-20	20			
L19130-01DUP	DUP	07/02/14 21:33			169	168.9	mg/L				0.1	20	
WG366975LCSW9	LCSW	07/02/14 23:12	WC140630-	820.0001		826.7	mg/L	100.8	90	110			
WG366975PBW3	PBW	07/02/14 23:21				2	mg/L		-20	20			
WG366975LCSW12	LCSW	07/03/14 2:31	WC140630-	820.0001		816.1	mg/L	99.5	90	110			
WG366975PBW4	PBW	07/03/14 2:40				2.3	mg/L		-20	20			
WG366975LCSW15	LCSW	07/03/14 6:12	WC140630-	820.0001		835.2	mg/L	101.9	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.022	mg/L	101.1	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.09	0.09			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0011		1.087	mg/L	108.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0011	.08	1.184	mg/L	110.3	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0011	.08	1.166	mg/L	108.5	85	115	1.53	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.991	mg/L	99.6	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.09	0.09			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.066	0.066			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1.0011		1.048	mg/L	104.7	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1.0011	U	1.049	mg/L	104.8	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1.0011	U	1.045	mg/L	104.4	70	130	0.38	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.02002		.01944	mg/L	97.1	90	110			
WG367158ICB	ICB	07/08/14 11:56				.00044	mg/L		-0.0012	0.0012			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.01		.01052	mg/L	105.2	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.01	.0007	.01119	mg/L	104.9	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.01	.0007	.0113	mg/L	106	70	130	0.98	20	

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ACZ Project ID: ***L19129***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.02002		.01967	mg/L	98.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0012	0.0012			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00088	0.00088			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.01		.0109	mg/L	109	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.01	U	.01075	mg/L	107.5	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.01	U	.01084	mg/L	108.4	70	130	0.83	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05124	mg/L	102.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				.00024	mg/L		-0.0006	0.0006			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.04925	mg/L	98.3	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	.0366	.09534	mg/L	117.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	.0366	.09298	mg/L	112.5	70	130	2.51	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04953	mg/L	99.1	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0006	0.0006			
WG367077LRB	LRB	07/08/14 22:22				.00022	mg/L		-0.00044	0.00044			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.0525	mg/L	104.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	.0056	.05412	mg/L	96.8	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	.0056	.05528	mg/L	99.2	70	130	2.12	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.982	mg/L	99.1	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.009	0.009			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5		.5032	mg/L	100.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5	U	.5072	mg/L	101.4	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5	U	.5111	mg/L	102.2	85	115	0.77	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.9782	mg/L	98.9	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.009	0.009			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.0066	0.0066			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	.5		.5053	mg/L	101.1	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	.5	.034	.5386	mg/L	100.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	.5	.034	.5325	mg/L	99.7	70	130	1.14	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04683	mg/L	93.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.04885	mg/L	97.6	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.04817	mg/L	96.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.04815	mg/L	96.2	70	130	0.04	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04748	mg/L	95	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				.000058	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04834	mg/L	96.6	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.00032	.047	mg/L	93.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.00032	.04697	mg/L	93.2	70	130	0.06	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366943													
WG366943ICV	ICV	07/02/14 12:15	II140701-2	2		2.018	mg/L	100.9	95	105			
WG366943ICB	ICB	07/02/14 12:21				U	mg/L		-0.12	0.12			
WG366943LFB	LFB	07/02/14 12:34	II140611-2	.999		1	mg/L	100.1	85	115			
L19116-01AS	AS	07/02/14 12:55	II140611-2	.999	U	1.009	mg/L	101	85	115			
L19116-01ASD	ASD	07/02/14 12:58	II140611-2	.999	U	.997	mg/L	99.8	85	115	1.2	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		2.02	mg/L	101	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.12	0.12			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.088	0.088			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	.999		1.037	mg/L	103.8	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	.999	U	.997	mg/L	99.8	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	.999	U	.982	mg/L	98.3	70	130	1.52	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.033	mg/L	101.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.03	0.03			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.509	mg/L	101.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	.14	.655	mg/L	102.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	.14	.659	mg/L	103.7	85	115	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		2.009	mg/L	100.5	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.03	0.03			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.022	0.022			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	.5005		.499	mg/L	99.7	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	.5005	U	.49	mg/L	97.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	.5005	U	.474	mg/L	94.7	70	130	3.32	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04975	mg/L	99.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.05194	mg/L	103.7	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	U	.05221	mg/L	104.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	U	.05176	mg/L	103.3	70	130	0.87	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.0509	mg/L	101.8	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.05142	mg/L	102.6	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	U	.04837	mg/L	96.5	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	U	.04867	mg/L	97.1	70	130	0.62	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		100.25	mg/L	100.3	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	67.98099		72.71	mg/L	107	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	67.98099	8.2	80.66	mg/L	106.6	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	67.98099	8.2	79.8	mg/L	105.3	85	115	1.07	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	100		100.65	mg/L	100.7	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.3	0.3			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.22	0.22			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	67.98099		72.88	mg/L	107.2	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	67.98099	10.3	80.69	mg/L	103.5	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	67.98099	10.3	80.41	mg/L	103.1	70	130	0.35	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			
L19147-01DUP	DUP	07/08/14 18:31			2.23	2.22	mg/L				0.4	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	2.15	33.1	mg/L	103.2	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.0511	mg/L	102.2	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05243	mg/L	104.8	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0009	.05437	mg/L	106.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0009	.05264	mg/L	103.4	70	130	3.23	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04946	mg/L	98.9	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05041	mg/L	100.7	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.05114	mg/L	102.2	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.05084	mg/L	101.6	70	130	0.59	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04791	mg/L	95.8	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05222	mg/L	104.3	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0003	.05265	mg/L	104.6	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0003	.0522	mg/L	103.7	70	130	0.86	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04861	mg/L	97.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04997	mg/L	99.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.00111	.05032	mg/L	98.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.00111	.04976	mg/L	97.2	70	130	1.12	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975LCSW2	LCSW	07/02/14 16:36	PCN44568	1408.8		1453.8	umhos/cm	103.2	90	110			
WG366975LCSW5	LCSW	07/02/14 19:50	PCN44568	1408.8		1428.3	umhos/cm	101.4	90	110			
L19130-01DUP	DUP	07/02/14 21:33			840	840	umhos/cm				0	20	
WG366975LCSW8	LCSW	07/02/14 22:58	PCN44568	1408.8		1406.9	umhos/cm	99.9	90	110			
WG366975LCSW11	LCSW	07/03/14 2:18	PCN44568	1408.8		1391.6	umhos/cm	98.8	90	110			
WG366975LCSW14	LCSW	07/03/14 5:58	PCN44568	1408.8		1372.2	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05178	mg/L	103.6	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05		.05176	mg/L	103.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05	U	.05239	mg/L	104.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05	U	.05087	mg/L	101.7	70	130	2.94	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05084	mg/L	101.7	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				.00107	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05		.05111	mg/L	102.2	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05	U	.05103	mg/L	102.1	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05	U	.0512	mg/L	102.4	70	130	0.33	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367189													
WG367189ICV	ICV	07/08/14 12:48	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367189ICB	ICB	07/08/14 12:48				U	mg/L		-0.003	0.003			
WG367086LRB	LRB	07/08/14 12:49				U	mg/L		-0.003	0.003			
WG367086LFB	LFB	07/08/14 12:50	WI140702-2	.2		.1959	mg/L	98	90	110			
L19120-01DUP	DUP	07/08/14 12:52			U	U	mg/L				0	20	RA
L19120-02LFM	LFM	07/08/14 12:54	WI140702-2	.2	U	.1838	mg/L	91.9	90	110			
L19129-03DUP	DUP	07/08/14 13:04			U	U	mg/L				0	20	RA
L19130-01LFM	LFM	07/08/14 13:05	WI140702-2	.2	U	.2006	mg/L	100.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L19129***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367189													
WG367189ICV	ICV	07/08/14 12:48	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367189ICB	ICB	07/08/14 12:48				U	mg/L		-0.003	0.003			
WG367191													
WG367110LRB	LRB	07/08/14 13:24				U	mg/L		-0.003	0.003			
WG367110LFB	LFB	07/08/14 13:25	WI140702-4	.2		.2009	mg/L	100.5	90	110			
L19117-01DUP	DUP	07/08/14 13:26			U	U	mg/L				0	20	RA
L19118-01LFM	LFM	07/08/14 13:28	WI140702-4	.2	U	.1974	mg/L	98.7	90	110			
L19242-02LFM	LFM	07/08/14 14:21	WI140702-4	.2	U	.2088	mg/L	104.4	90	110			
L19242-02DUP	DUP	07/08/14 14:22			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L19147-01DUP	DUP	07/08/14 18:31			.37	.37	mg/L				0	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	1.5	.31	1.84	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.05	mg/L	102.5	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.001		1.03	mg/L	102.9	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.001	U	1.03	mg/L	102.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.001	U	1.06	mg/L	105.9	85	115	2.87	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		2.02	mg/L	101	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.3	0.3			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.22	0.22			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1.001		1.01	mg/L	100.9	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1.001	U	.97	mg/L	96.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1.001	U	.98	mg/L	97.9	70	130	1.03	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.994	mg/L	99.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.06	0.06			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0014		1.037	mg/L	103.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0014	.19	1.2	mg/L	100.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0014	.19	1.212	mg/L	102.1	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.974	mg/L	98.7	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.06	0.06			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.044	0.044			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1.0014		1.004	mg/L	100.3	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1.0014	9.96	10.84	mg/L	87.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1.0014	9.96	10.68	mg/L	71.9	70	130	1.49	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05298	mg/L	105.9	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.05505	mg/L	110	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.05483	mg/L	109.6	70	130	0.4	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05216	mg/L	104.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				.00016	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05099	mg/L	101.9	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.0002	.05115	mg/L	101.8	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.0002	.05106	mg/L	101.6	70	130	0.18	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.0072	mg/L	100.4	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.024	0.024			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.002		.9971	mg/L	99.5	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.002	.093	1.095	mg/L	100	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.002	.093	1.094	mg/L	99.9	85	115	0.09	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		2.0188	mg/L	100.9	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.024	0.024			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.0176	0.0176			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1.002		1.019	mg/L	101.7	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1.002	.011	1.035	mg/L	102.2	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1.002	.011	1.021	mg/L	100.8	70	130	1.36	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		97.21	mg/L	97.2	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	50.00131		49.6	mg/L	99.2	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	50.00131	.6	50	mg/L	98.8	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	50.00131	.6	49.5	mg/L	97.8	85	115	1.01	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	100		97.06	mg/L	97.1	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.6	0.6			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.44	0.44			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	50.00131		49.21	mg/L	98.4	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	50.00131	1.8	48.67	mg/L	93.7	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	50.00131	1.8	48.7	mg/L	93.8	70	130	0.06	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04996	mg/L	99.9	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.05154	mg/L	102.9	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	.0005	.05353	mg/L	105.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	.0005	.05268	mg/L	104.2	70	130	1.6	20	
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.05		.04991	mg/L	99.8	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.0015	0.0015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.0501		.05145	mg/L	102.7	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.0501	U	.05073	mg/L	101.3	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.0501	U	.05165	mg/L	103.1	70	130	1.8	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05096	mg/L	101.9	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.04911	mg/L	98	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	.6707	.7274	mg/L	113.2	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	.6707	.7184	mg/L	95.2	70	130	1.24	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
L19108-01MS	MS	07/01/14 17:51	HG5XPREP	50	U	9.4	ng/L	94	71	125			
L19108-01MSD	MSD	07/01/14 17:56	HG5XPREP	50	U	9.5	ng/L	95	71	125	1.06	24	
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L19129***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG367108													
WG367108CCV1	CCV	07/08/14 13:22	HG140624-4	10		9.82	ng/L	98.2	76.5	123.4			
WG367108CCB1	CCB	07/08/14 13:27				U	ng/L		-0.5	0.5			
WG367108PQV	PQV	07/08/14 13:32	HG140624-6	.5		.44	ng/L	88	70	130			
WG367108LFB	LFB	07/08/14 13:37	HG140624-5	2		1.91	ng/L	95.5	71	125			
L19129-01MS	MS	07/08/14 13:47	HG140624-5	2	.3	2.2	ng/L	95	71	125			
L19129-01MSD	MSD	07/08/14 13:52	HG140624-5	2	.3	2.18	ng/L	94	71	125	0.91	24	
WG367108CCV2	CCV	07/08/14 14:32	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB2	CCB	07/08/14 14:37				U	ng/L		-0.5	0.5			
WG367108CCV3	CCV	07/08/14 16:01	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB3	CCB	07/08/14 16:06				U	ng/L		-0.5	0.5			
WG367108CCV4	CCV	07/08/14 16:52	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB4	CCB	07/08/14 16:57				U	ng/L		-0.5	0.5			
WG367108CCV5	CCV	07/08/14 17:32	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB5	CCB	07/08/14 17:37				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.01998		.01882	mg/L	94.2	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0502		.04968	mg/L	99	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0502	.0038	.05588	mg/L	103.7	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0502	.0038	.05544	mg/L	102.9	70	130	0.79	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.01998		.01867	mg/L	93.4	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0502		.04824	mg/L	96.1	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0502	.0006	.04872	mg/L	95.9	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0502	.0006	.04867	mg/L	95.8	70	130	0.1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05136	mg/L	102.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0018	0.0018			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05		.05233	mg/L	104.7	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05	U	.05205	mg/L	104.1	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05	U	.05035	mg/L	100.7	70	130	3.32	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05061	mg/L	101.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0018	0.0018			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00132	0.00132			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05		.05045	mg/L	100.9	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05	.003	.05263	mg/L	99.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05	.003	.05292	mg/L	99.8	70	130	0.55	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367215													
WG367215ICV	ICV	07/08/14 22:09	WI140417-3	2.416		2.361	mg/L	97.7	90	110			
WG367215ICB	ICB	07/08/14 22:11				U	mg/L		-0.06	0.06			
WG367219													
WG367219LFB1	LFB	07/09/14 0:06	WI140215-3	2		1.953	mg/L	97.7	90	110			
L19014-01AS	AS	07/09/14 0:09	WI140215-3	2	U	1.936	mg/L	96.8	90	110			
L19111-02DUP	DUP	07/09/14 0:11			U	U	mg/L				0	20	RA
L19129-02AS	AS	07/09/14 0:25	WI140215-3	2	1.14	3.058	mg/L	95.9	90	110			
L19129-03DUP	DUP	07/09/14 0:27			.76	.759	mg/L				0.1	20	
WG367219LFB2	LFB	07/09/14 0:40	WI140215-3	2		1.993	mg/L	99.7	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366993													
WG366993LFB1	LFB	07/02/14 16:52	WI140113-8	1		.977	mg/L	97.7	90	110			
WG366993LFB2	LFB	07/02/14 17:24	WI140113-8	1		.953	mg/L	95.3	90	110			
L19123-01AS	AS	07/02/14 17:41	WI140113-8	10	24.4	35.05	mg/L	106.5	90	110			
L19123-02DUP	DUP	07/02/14 17:46			.75	.789	mg/L				5.1	20	

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975LCSW1	LCSW	07/02/14 16:34	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366975LCSW4	LCSW	07/02/14 19:49	PCN45265	5.99		6.1	units	101.8	5.89	6.09			
L19130-01DUP	DUP	07/02/14 21:33			8.6	8.65	units				0.6	20	
WG366975LCSW7	LCSW	07/02/14 22:56	PCN45265	5.99		6.1	units	101.8	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19129***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367221													
WG367167LRB	LRB	07/09/14 1:16				U	mg/L		-0.03	0.03			
WG367167LFB	LFB	07/09/14 1:17	WI140701-2	.5		.485	mg/L	97	90	110			
L19123-02LFM	LFM	07/09/14 1:35	WI140701-2	.5	.08	.584	mg/L	100.8	90	110			
L19129-01DUP	DUP	07/09/14 1:38			.02	.018	mg/L				10.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	20		19.84	mg/L	99.2	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	99.99364		100.6	mg/L	100.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	99.99364	1.1	102.6	mg/L	101.5	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	99.99364	1.1	100.9	mg/L	99.8	85	115	1.67	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	20		19.87	mg/L	99.4	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.6	0.6			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.44	0.44			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	99.99364		101.1	mg/L	101.1	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	99.99364	4.7	104.1	mg/L	99.4	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	99.99364	4.7	103.3	mg/L	98.6	70	130	0.77	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367014													
WG367014PBW	PBW	07/03/14 9:50				U	mg/L		-20	20			
WG367014LCSW	LCSW	07/03/14 9:52	PCN46081	260		264	mg/L	101.5	80	120			
L19221-01DUP	DUP	07/03/14 10:18			380	374	mg/L				1.6	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366846													
WG366846PBW	PBW	07/01/14 10:15				U	mg/L		-15	15			
WG366846LCSW	LCSW	07/01/14 10:16	PCN46080	160		157	mg/L	98.1	80	120			
L19129-01DUP	DUP	07/01/14 10:59			U	U	mg/L				0	10	RA
WG367050													
WG367050PBW	PBW	07/03/14 15:48				U	mg/L		-15	15			
WG367050LCSW	LCSW	07/03/14 15:49	PCN46082	160		147	mg/L	91.9	80	120			
L19130-04DUP	DUP	07/03/14 16:02			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.04	mg/L	102	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		2.04	mg/L	102	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.3	0.3			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.22	0.22			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1.0009		1.07	mg/L	106.9	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1.0009	U	1.07	mg/L	106.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.94	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05065	mg/L	101.3	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05082	mg/L	101.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0028	.05824	mg/L	110.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0028	.05836	mg/L	111	70	130	0.21	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05117	mg/L	102.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				.00019	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05125	mg/L	102.4	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.04783	mg/L	95.6	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.04789	mg/L	95.7	70	130	0.13	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.02002		.02028	mg/L	101.3	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.01002		.01044	mg/L	104.2	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.01002	U	.01031	mg/L	102.9	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.01002	U	.01028	mg/L	102.6	70	130	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.02002		.02046	mg/L	102.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.01002		.01004	mg/L	100.2	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.01002	U	.00966	mg/L	96.4	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.01002	U	.009822	mg/L	98	70	130	1.66	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		98.64	mg/L	98.6	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	100.0393		100.7	mg/L	100.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	100.0393	175	271.2	mg/L	96.2	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	100.0393	175	267	mg/L	92	85	115	1.56	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	100		98.9	mg/L	98.9	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.6	0.6			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.44	0.44			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	100.0393		99.76	mg/L	99.7	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	100.0393	1.7	99.15	mg/L	97.4	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	100.0393	1.7	98.49	mg/L	96.8	70	130	0.67	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.9972	mg/L	99.9	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.015	0.015			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.5127	mg/L	102.4	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	.036	.5524	mg/L	103.2	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	.036	.5445	mg/L	101.6	85	115	1.44	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.983	mg/L	99.2	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.015	0.015			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.011	0.011			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	.5005		.5039	mg/L	100.7	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	.5005	.053	.5478	mg/L	98.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	.5005	.053	.5423	mg/L	97.8	70	130	1.01	20	

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ACZ Project ID: ***L19129***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			
L19147-01DUP	DUP	07/08/14 18:31			23	22.9	mg/L				0.4	20	
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	14.9	45.8	mg/L	103	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05142	mg/L	102.8	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0502		.05151	mg/L	102.6	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0502	U	.0538	mg/L	107.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0502	U	.05343	mg/L	106.4	70	130	0.69	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05215	mg/L	104.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0502		.04946	mg/L	98.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0502	.0001	.04993	mg/L	99.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0502	.0001	.04994	mg/L	99.3	70	130	0.02	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.0501		.04996	mg/L	99.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05206	mg/L	104	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.05594	mg/L	111.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.05547	mg/L	110.8	70	130	0.84	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.0501		.0514	mg/L	102.6	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05532	mg/L	110.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.05336	mg/L	106.6	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.05168	mg/L	103.3	70	130	3.2	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.0292	mg/L	101.5	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.015	0.015			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1		1.017	mg/L	101.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1	U	1.03	mg/L	103	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1	U	1.035	mg/L	103.5	85	115	0.48	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.9967	mg/L	99.8	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.015	0.015			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.011	0.011			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	1		1.014	mg/L	101.4	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	1	U	.989	mg/L	98.9	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	1	U	.9831	mg/L	98.3	70	130	0.6	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04905	mg/L	98.1	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05046	mg/L	100.8	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0019	.05446	mg/L	105	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0019	.05386	mg/L	103.8	70	130	1.11	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04927	mg/L	98.5	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04779	mg/L	95.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.0492	mg/L	98.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.04862	mg/L	97.1	70	130	1.19	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05076	mg/L	101.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0006	0.0006			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05378	mg/L	107.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0189	.07603	mg/L	114.1	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0189	.07332	mg/L	108.7	70	130	3.63	20	

SPF Water Engineering

ACZ Project ID: ***L19129***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.0485	mg/L	97	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0006	0.0006			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00044	0.00044			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05093	mg/L	101.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.0005	.05256	mg/L	104	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.0005	.05245	mg/L	103.8	70	130	0.21	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.954	mg/L	97.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.03	0.03			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.517	mg/L	103.3	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	U	.524	mg/L	104.7	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	U	.518	mg/L	103.5	85	115	1.15	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367064													
WG367064ICV	ICV	07/07/14 9:59	II140624-2	2		1.981	mg/L	99.1	95	105			
WG367064ICB	ICB	07/07/14 10:05				U	mg/L		-0.03	0.03			
WG367001LRB	LRB	07/07/14 10:17				U	mg/L		-0.022	0.022			
WG367001LFB	LFB	07/07/14 10:20	II140611-2	.5005		.516	mg/L	103.1	85	115			
L19147-01LFM	LFM	07/07/14 11:34	II140611-2	.5005	.05	.546	mg/L	99.1	70	130			
L19147-01LFMD	LFMD	07/07/14 11:37	II140611-2	.5005	.05	.542	mg/L	98.3	70	130	0.74	20	

SPF Water Engineering ACZ Project ID: ***L19129***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19129-01	WG366975	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367124	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367219	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG366975	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367014	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG366846	Residue, Non-Filterable (TSS) @105C	SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG366975	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L19129***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19129-02	WG366975	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367124	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367219	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG366975	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367014	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG366975	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

SPF Water Engineering ACZ Project ID: ***L19129***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19129-03	WG367158	Manganese, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG366975	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367124	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG367219	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG366993	Nitrogen, ammonia	M350.1 - Automated Phenate	Q6	Sample was received above recommended temperature.
	WG366975	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367014	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	DJ	Sample dilution required due to insufficient sample.
			SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	Q6	Sample was received above recommended temperature.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG366975	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19129
Date Received: 06/27/2014 09:37
Received By: mtb
Date Printed: 6/30/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19923A	4.5	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. 19129

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 2nd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**Method 1631						
GW-1	6/25/14 14:20	GW	8	X							
59772	6/25/14 15:30	GW	8	X							
59760	6/25/14 16:55	GW	8	X							
mercury trip blank	6/25/14 14:30	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	6-26-14 9:00		6.27.14 9:30

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19129 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 11, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19130

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 27, 2014. This project has been assigned to ACZ's project number, L19130. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19130. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 11, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19130

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on June 27, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19130. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19130. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L19130-01***
Date Sampled: *06/25/14 10:40*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 13:46	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 15:11	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:24	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 12:45	las
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:24	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L19130-01***
Date Sampled: *06/25/14 10:40*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	07/01/14 16:38	aeb
Aluminum, total	M200.7 ICP	1	5.82			mg/L	0.03	0.2	07/03/14 15:12	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/14 13:09	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/14 22:45	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0131			mg/L	0.0002	0.001	07/08/14 13:09	las
Arsenic, total	M200.8 ICP-MS	1	0.0160			mg/L	0.0002	0.001	07/08/14 22:45	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/01/14 16:38	aeb
Barium, total	M200.7 ICP	1	0.014	B		mg/L	0.003	0.02	07/03/14 15:12	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:09	las
Beryllium, total	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	07/08/14 22:45	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:17	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:12	jjc
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/01/14 16:38	aeb
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	07/03/14 15:12	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:09	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:45	pmc
Calcium, dissolved	M200.7 ICP	1	8.1			mg/L	0.1	0.5	07/01/14 16:38	aeb
Calcium, total	M200.7 ICP	1	11.4			mg/L	0.1	0.5	07/03/14 15:12	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/14 13:09	las
Chromium, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	07/08/14 22:45	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00031			mg/L	0.00005	0.0003	07/08/14 13:09	las
Cobalt, total	M200.8 ICP-MS	1	0.00029	B		mg/L	0.00005	0.0003	07/08/14 22:45	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 13:09	las
Copper, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.003	07/08/14 22:45	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:38	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:12	jjc
Iron, dissolved	M200.7 ICP	1	0.17			mg/L	0.02	0.05	07/01/14 16:38	aeb
Iron, total	M200.7 ICP	1	5.96			mg/L	0.02	0.05	07/03/14 15:12	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:09	las
Lead, total	M200.8 ICP-MS	1	0.0055			mg/L	0.0001	0.0005	07/08/14 22:45	pmc
Lithium, dissolved	M200.7 ICP	1	0.093			mg/L	0.008	0.04	07/01/14 16:38	aeb
Lithium, total	M200.7 ICP	1	0.095			mg/L	0.008	0.04	07/03/14 15:12	jjc
Magnesium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	07/01/14 16:38	aeb
Magnesium, total	M200.7 ICP	1	1.5			mg/L	0.2	1	07/03/14 15:12	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0336		*	mg/L	0.0005	0.003	07/08/14 13:09	las
Manganese, total	M200.8 ICP-MS	1	0.0602			mg/L	0.0005	0.003	07/08/14 22:45	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/01/14 17:16	las
Mercury, total	M1631, Atomic Fluorescence	5	8			ng/L	1	3	07/08/14 14:12	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0110			mg/L	0.0005	0.003	07/08/14 13:09	las
Molybdenum, total	M200.8 ICP-MS	1	0.0109			mg/L	0.0005	0.003	07/08/14 22:45	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 13:09	las
Nickel, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0006	0.003	07/08/14 22:45	pmc
Potassium, dissolved	M200.7 ICP	1	1.1			mg/L	0.2	1	07/01/14 16:38	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L19130-01***
Date Sampled: *06/25/14 10:40*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.2			mg/L	0.2	1	07/03/14 15:12	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:38	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:12	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/08/14 13:09	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/08/14 22:45	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:09	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:45	pmc
Sodium, dissolved	M200.7 ICP	1	175			mg/L	0.2	1	07/01/14 16:38	aeb
Sodium, total	M200.7 ICP	1	177			mg/L	0.2	1	07/03/14 15:12	jjc
Strontium, dissolved	M200.7 ICP	1	0.036			mg/L	0.005	0.03	07/01/14 16:38	aeb
Strontium, total	M200.7 ICP	1	0.056			mg/L	0.005	0.03	07/03/14 15:12	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:09	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:45	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 13:09	las
Tin, total	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	07/08/14 22:45	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:38	aeb
Titanium, total	M200.7 ICP	1	0.026	B		mg/L	0.005	0.03	07/03/14 15:12	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:09	las
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	07/08/14 22:45	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/08/14 13:09	las
Vanadium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	07/08/14 22:45	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:38	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:12	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L19130-01***
Date Sampled: *06/25/14 10:40*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	156			mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	12	B		mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	169		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	5	42.0		*	mg/L	2.5	12.5	07/08/14 17:01	jlf
Conductivity @25C	SM2510B	1	840		*	umhos/cm	1	10	07/02/14 21:23	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:04	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:39	mpb
Fluoride	M300.0 - Ion Chromatography	5	2.05		*	mg/L	0.25	1.25	07/08/14 17:01	jlf
Hardness as CaCO3	SM2340B - Calculation		23			mg/L	0.8	4	07/11/14 12:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/09/14 0:29	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.15	B		mg/L	0.05	0.2	07/02/14 17:35	bsu
pH (lab)	SM4500H+ B									
pH		1	8.6	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05		*	mg/L	0.01	0.05	07/09/14 1:43	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	510		*	mg/L	10	20	07/01/14 9:56	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	2	200	H	*	mg/L	10	40	07/03/14 15:55	eaa
Sulfate	M300.0 - Ion Chromatography	5	142			mg/L	2.5	12.5	07/08/14 17:01	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-4-DUP

ACZ Sample ID: ***L19130-02***
Date Sampled: *06/25/14 10:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 14:07	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 15:16	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:31	mpb
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:36	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 12:56	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-4-DUP

ACZ Sample ID: ***L19130-02***
Date Sampled: *06/25/14 10:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.08	B		mg/L	0.03	0.2	07/01/14 16:41	aeb
Aluminum, total	M200.7 ICP	1	3.94			mg/L	0.03	0.2	07/03/14 15:15	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/14 13:19	las
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/14 22:48	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0129			mg/L	0.0002	0.001	07/08/14 13:19	las
Arsenic, total	M200.8 ICP-MS	1	0.0148			mg/L	0.0002	0.001	07/08/14 22:48	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/01/14 16:41	aeb
Barium, total	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	07/03/14 15:15	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:19	las
Beryllium, total	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	07/08/14 22:48	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:20	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:15	jjc
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/01/14 16:41	aeb
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	07/03/14 15:15	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:19	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:48	pmc
Calcium, dissolved	M200.7 ICP	1	8.2			mg/L	0.1	0.5	07/01/14 16:41	aeb
Calcium, total	M200.7 ICP	1	10.3			mg/L	0.1	0.5	07/03/14 15:15	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/14 13:19	las
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/14 22:48	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00063			mg/L	0.00005	0.0003	07/08/14 13:19	las
Cobalt, total	M200.8 ICP-MS	1	0.00022	B		mg/L	0.00005	0.0003	07/08/14 22:48	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 13:19	las
Copper, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.003	07/08/14 22:48	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:41	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:15	jjc
Iron, dissolved	M200.7 ICP	1	0.19			mg/L	0.02	0.05	07/01/14 16:41	aeb
Iron, total	M200.7 ICP	1	3.98			mg/L	0.02	0.05	07/03/14 15:15	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:19	las
Lead, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0001	0.0005	07/08/14 22:48	pmc
Lithium, dissolved	M200.7 ICP	1	0.093			mg/L	0.008	0.04	07/01/14 16:41	aeb
Lithium, total	M200.7 ICP	1	0.093			mg/L	0.008	0.04	07/03/14 15:15	jjc
Magnesium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	07/01/14 16:41	aeb
Magnesium, total	M200.7 ICP	1	1.2			mg/L	0.2	1	07/03/14 15:15	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0333			mg/L	0.0005	0.003	07/08/14 13:19	las
Manganese, total	M200.8 ICP-MS	1	0.0509			mg/L	0.0005	0.003	07/08/14 22:48	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 17:21	las
Mercury, total	M1631, Atomic Fluorescence	5	5			ng/L	1	3	07/08/14 14:17	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0112			mg/L	0.0005	0.003	07/08/14 13:19	las
Molybdenum, total	M200.8 ICP-MS	1	0.0111			mg/L	0.0005	0.003	07/08/14 22:48	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 13:19	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 22:48	pmc
Potassium, dissolved	M200.7 ICP	1	1.1			mg/L	0.2	1	07/01/14 16:41	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-4-DUP

ACZ Sample ID: ***L19130-02***
Date Sampled: *06/25/14 10:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	07/03/14 15:15	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:41	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:15	jjc
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/08/14 13:19	las
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/08/14 22:48	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:19	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 22:48	pmc
Sodium, dissolved	M200.7 ICP	1	175			mg/L	0.2	1	07/01/14 16:41	aeb
Sodium, total	M200.7 ICP	1	172			mg/L	0.2	1	07/03/14 15:15	jjc
Strontium, dissolved	M200.7 ICP	1	0.036			mg/L	0.005	0.03	07/01/14 16:41	aeb
Strontium, total	M200.7 ICP	1	0.048			mg/L	0.005	0.03	07/03/14 15:15	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:19	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:48	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 13:19	las
Tin, total	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	07/08/14 22:48	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:41	aeb
Titanium, total	M200.7 ICP	1	0.019	B		mg/L	0.005	0.03	07/03/14 15:15	jjc
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:19	las
Uranium, total	M200.8 ICP-MS	1	0.0013			mg/L	0.0001	0.0005	07/08/14 22:48	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/08/14 13:19	las
Vanadium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	07/08/14 22:48	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:41	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:15	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-4-DUP

ACZ Sample ID: ***L19130-02***
Date Sampled: *06/25/14 10:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	157			mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	12	B		mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	169		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	5	48.6		*	mg/L	2.5	12.5	07/08/14 17:19	jlf
Conductivity @25C	SM2510B	1	843		*	umhos/cm	1	10	07/02/14 21:42	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:06	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:40	mpb
Fluoride	M300.0 - Ion Chromatography	5	2.41		*	mg/L	0.25	1.25	07/08/14 17:19	jlf
Hardness as CaCO3	SM2340B - Calculation		23			mg/L	0.8	4	07/11/14 12:40	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/09/14 0:30	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.12	B		mg/L	0.05	0.2	07/02/14 17:36	bsu
pH (lab)	SM4500H+ B									
pH		1	8.7	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	07/09/14 1:44	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	500		*	mg/L	10	20	07/01/14 9:59	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1	135	H	*	mg/L	5	20	07/03/14 15:57	eaa
Sulfate	M300.0 - Ion Chromatography	5	168			mg/L	2.5	12.5	07/08/14 17:19	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L19130-03***
Date Sampled: *06/25/14 11:37*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 14:18	mpb
Cyanide, WAD	SM4500-CN I- distillation								07/07/14 15:22	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:38	mpb
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:47	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 13:07	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L19130-03***
Date Sampled: *06/25/14 11:37*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/14 16:57	aeb
Aluminum, total	M200.7 ICP	1	4.36			mg/L	0.03	0.2	07/03/14 15:18	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	07/08/14 13:23	las
Antimony, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0004	0.002	07/08/14 22:52	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.1870			mg/L	0.0002	0.001	07/08/14 13:23	las
Arsenic, total	M200.8 ICP-MS	1	0.1847			mg/L	0.0002	0.001	07/08/14 22:52	pmc
Barium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.003	0.02	07/01/14 16:57	aeb
Barium, total	M200.7 ICP	1	0.077			mg/L	0.003	0.02	07/03/14 15:18	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:23	las
Beryllium, total	M200.8 ICP-MS	1	0.00054			mg/L	0.00005	0.0003	07/08/14 22:52	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:23	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:18	jjc
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	07/01/14 16:57	aeb
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	07/03/14 15:18	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:23	las
Cadmium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/08/14 22:52	pmc
Calcium, dissolved	M200.7 ICP	1	39.7			mg/L	0.1	0.5	07/01/14 16:57	aeb
Calcium, total	M200.7 ICP	1	41			mg/L	0.1	0.5	07/03/14 15:18	jjc
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/08/14 13:23	las
Chromium, total	M200.8 ICP-MS	1	0.0022			mg/L	0.0005	0.002	07/08/14 22:52	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00126			mg/L	0.00005	0.0003	07/08/14 13:23	las
Cobalt, total	M200.8 ICP-MS	1	0.00181			mg/L	0.00005	0.0003	07/08/14 22:52	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 13:23	las
Copper, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	07/08/14 22:52	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:57	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:18	jjc
Iron, dissolved	M200.7 ICP	1	0.86			mg/L	0.02	0.05	07/01/14 16:57	aeb
Iron, total	M200.7 ICP	1	5.04			mg/L	0.02	0.05	07/03/14 15:18	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:23	las
Lead, total	M200.8 ICP-MS	1	0.0040			mg/L	0.0001	0.0005	07/08/14 22:52	pmc
Lithium, dissolved	M200.7 ICP	1	0.569			mg/L	0.008	0.04	07/01/14 16:57	aeb
Lithium, total	M200.7 ICP	1	0.562			mg/L	0.008	0.04	07/03/14 15:18	jjc
Magnesium, dissolved	M200.7 ICP	1	3			mg/L	0.2	1	07/01/14 16:57	aeb
Magnesium, total	M200.7 ICP	1	3.5			mg/L	0.2	1	07/03/14 15:18	jjc
Manganese, dissolved	M200.8 ICP-MS	5	0.407			mg/L	0.003	0.01	07/10/14 13:00	msh
Manganese, total	M200.8 ICP-MS	5	0.486			mg/L	0.003	0.01	07/10/14 19:51	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	07/01/14 17:26	las
Mercury, total	M1631, Atomic Fluorescence	5	24			ng/L	1	3	07/08/14 14:22	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0264			mg/L	0.0005	0.003	07/08/14 13:23	las
Molybdenum, total	M200.8 ICP-MS	1	0.0255			mg/L	0.0005	0.003	07/08/14 22:52	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0055			mg/L	0.0006	0.003	07/08/14 13:23	las
Nickel, total	M200.8 ICP-MS	1	0.0070			mg/L	0.0006	0.003	07/08/14 22:52	pmc
Potassium, dissolved	M200.7 ICP	1	9.9			mg/L	0.2	1	07/01/14 16:57	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L19130-03***
Date Sampled: *06/25/14 11:37*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	10.4			mg/L	0.2	1	07/03/14 15:18	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 16:57	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:18	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/08/14 13:23	las
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/08/14 22:52	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:23	las
Silver, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	07/08/14 22:52	pmc
Sodium, dissolved	M200.7 ICP	1	138			mg/L	0.2	1	07/01/14 16:57	aeb
Sodium, total	M200.7 ICP	1	137			mg/L	0.2	1	07/03/14 15:18	jjc
Strontium, dissolved	M200.7 ICP	1	0.133			mg/L	0.005	0.03	07/01/14 16:57	aeb
Strontium, total	M200.7 ICP	1	0.142			mg/L	0.005	0.03	07/03/14 15:18	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:23	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 22:52	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 13:23	las
Tin, total	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0005	07/08/14 22:52	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 16:57	aeb
Titanium, total	M200.7 ICP	1	0.161			mg/L	0.005	0.03	07/03/14 15:18	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/08/14 13:23	las
Uranium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0005	07/08/14 22:52	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	07/08/14 13:23	las
Vanadium, total	M200.8 ICP-MS	1	0.0064			mg/L	0.0002	0.001	07/08/14 22:52	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 16:57	aeb
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	07/03/14 15:18	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L19130-03***
Date Sampled: *06/25/14 11:37*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	75			mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	75		*	mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	5	12.7		*	mg/L	2.5	12.5	07/08/14 17:37	jlf
Conductivity @25C	SM2510B	1	908		*	umhos/cm	1	10	07/02/14 21:51	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:07	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:41	mpb
Fluoride	M300.0 - Ion Chromatography	5	1.41		*	mg/L	0.25	1.25	07/08/14 17:37	jlf
Hardness as CaCO3	SM2340B - Calculation		111			mg/L	0.8	4	07/11/14 12:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/09/14 0:31	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.12	B		mg/L	0.05	0.2	07/02/14 17:37	bsu
pH (lab)	SM4500H+ B									
pH		1	7.9	H	*	units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.92		*	mg/L	0.01	0.05	07/09/14 1:46	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	640		*	mg/L	10	20	07/01/14 10:02	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1	114	H	*	mg/L	5	20	07/03/14 15:59	eaa
Sulfate	M300.0 - Ion Chromatography	5	320			mg/L	2.5	12.5	07/08/14 17:37	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L19130-04***
Date Sampled: *06/25/14 13:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/07/14 14:28	mpb
Cyanide, WAD	SM4500-CN I- distillation		-						07/07/14 15:27	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:45	mpb
Total Hot Plate Digestion	M200.2 ICP								07/02/14 13:59	jjc
Total Hot Plate Digestion	M200.2 ICP-MS								07/07/14 13:18	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L19130-04***
Date Sampled: *06/25/14 13:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/01/14 17:00	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	07/03/14 15:21	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/08/14 13:26	las
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	07/08/14 23:01	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0313			mg/L	0.0002	0.001	07/08/14 13:26	las
Arsenic, total	M200.8 ICP-MS	1	0.0288			mg/L	0.0002	0.001	07/08/14 23:01	pmc
Barium, dissolved	M200.7 ICP	1	0.029			mg/L	0.003	0.02	07/01/14 17:00	aeb
Barium, total	M200.7 ICP	1	0.029			mg/L	0.003	0.02	07/03/14 15:21	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:26	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 23:01	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 13:26	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/03/14 15:21	jjc
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/01/14 17:00	aeb
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	07/03/14 15:21	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:26	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 23:01	pmc
Calcium, dissolved	M200.7 ICP	1	29.5			mg/L	0.1	0.5	07/01/14 17:00	aeb
Calcium, total	M200.7 ICP	1	29.9			mg/L	0.1	0.5	07/03/14 15:21	jjc
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	07/08/14 13:26	las
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/08/14 23:01	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	07/08/14 13:26	las
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	07/08/14 23:01	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 13:26	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/08/14 23:01	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 17:00	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:21	jjc
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	07/01/14 17:00	aeb
Iron, total	M200.7 ICP	1	0.25			mg/L	0.02	0.05	07/03/14 15:21	jjc
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:26	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 23:01	pmc
Lithium, dissolved	M200.7 ICP	1	0.067			mg/L	0.008	0.04	07/01/14 17:00	aeb
Lithium, total	M200.7 ICP	1	0.067			mg/L	0.008	0.04	07/03/14 15:21	jjc
Magnesium, dissolved	M200.7 ICP	1	3.4			mg/L	0.2	1	07/01/14 17:00	aeb
Magnesium, total	M200.7 ICP	1	3.4			mg/L	0.2	1	07/03/14 15:21	jjc
Manganese, dissolved	M200.8 ICP-MS	1	0.0015	B		mg/L	0.0005	0.003	07/08/14 13:26	las
Manganese, total	M200.8 ICP-MS	1	0.0083			mg/L	0.0005	0.003	07/08/14 23:01	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/01/14 17:31	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/08/14 14:27	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0047			mg/L	0.0005	0.003	07/08/14 13:26	las
Molybdenum, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0005	0.003	07/08/14 23:01	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 13:26	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/08/14 23:01	pmc
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	07/01/14 17:00	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L19130-04***
Date Sampled: *06/25/14 13:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	07/03/14 15:21	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/01/14 17:00	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/03/14 15:21	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	07/08/14 13:26	las
Selenium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	07/08/14 23:01	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 13:26	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/08/14 23:01	pmc
Sodium, dissolved	M200.7 ICP	1	38.6			mg/L	0.2	1	07/01/14 17:00	aeb
Sodium, total	M200.7 ICP	1	38.8			mg/L	0.2	1	07/03/14 15:21	jjc
Strontium, dissolved	M200.7 ICP	1	0.120			mg/L	0.005	0.03	07/01/14 17:00	aeb
Strontium, total	M200.7 ICP	1	0.117			mg/L	0.005	0.03	07/03/14 15:21	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 13:26	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/08/14 23:01	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 13:26	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/14 23:01	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/01/14 17:00	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/03/14 15:21	jjc
Uranium, dissolved	M200.8 ICP-MS	1	0.0027			mg/L	0.0001	0.0005	07/08/14 13:26	las
Uranium, total	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0005	07/08/14 23:01	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0113			mg/L	0.0002	0.001	07/08/14 13:26	las
Vanadium, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0002	0.001	07/08/14 23:01	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/01/14 17:00	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	07/03/14 15:21	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L19130-04***
Date Sampled: *06/25/14 13:50*
Date Received: *06/27/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	120			mg/L	2	20	07/02/14 0:00	enb
Carbonate as CaCO3		1	4	B		mg/L	2	20	07/02/14 0:00	enb
Hydroxide as CaCO3		1		U		mg/L	2	20	07/02/14 0:00	enb
Total Alkalinity		1	124			mg/L	2	20	07/02/14 0:00	enb
Chloride	M300.0 - Ion Chromatography	1	8.18		*	mg/L	0.5	2.5	07/08/14 17:55	jlf
Conductivity @25C	SM2510B	1	355			umhos/cm	1	10	07/02/14 22:01	enb
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:09	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/08/14 13:41	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.41		*	mg/L	0.05	0.25	07/08/14 17:55	jlf
Hardness as CaCO3	SM2340B - Calculation		88			mg/L	0.8	4	07/11/14 12:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.62			mg/L	0.02	0.1	07/09/14 0:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U		mg/L	0.05	0.2	07/02/14 17:38	bsu
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	07/02/14 0:00	enb
pH measured at		1	22			C	0.1	0.1	07/02/14 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	07/09/14 1:47	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	250		*	mg/L	10	20	07/01/14 10:04	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		UH	*	mg/L	5	20	07/03/14 16:00	eaa
Sulfate	M300.0 - Ion Chromatography	1	31.2			mg/L	0.5	2.5	07/08/14 17:55	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19130***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975PBW1	PBW	07/02/14 16:30				U	mg/L		-20	20			
WG366975LCSW3	LCSW	07/02/14 16:49	WC140630-	820.0001		798	mg/L	97.3	90	110			
WG366975LCSW6	LCSW	07/02/14 20:05	WC140630-	820.0001		824.4	mg/L	100.5	90	110			
WG366975PBW2	PBW	07/02/14 20:14				U	mg/L		-20	20			
L19130-01DUP	DUP	07/02/14 21:33			169	168.9	mg/L				0.1	20	
L19134-07DUP	DUP	07/02/14 22:53			34	33.6	mg/L				1.2	20	
WG366975LCSW9	LCSW	07/02/14 23:12	WC140630-	820.0001		826.7	mg/L	100.8	90	110			
WG366975PBW3	PBW	07/02/14 23:21				2	mg/L		-20	20			
WG366975LCSW12	LCSW	07/03/14 2:31	WC140630-	820.0001		816.1	mg/L	99.5	90	110			
WG366975PBW4	PBW	07/03/14 2:40				2.3	mg/L		-20	20			
WG366975LCSW15	LCSW	07/03/14 6:12	WC140630-	820.0001		835.2	mg/L	101.9	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.022	mg/L	101.1	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.09	0.09			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0011		1.087	mg/L	108.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0011	.08	1.184	mg/L	110.3	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0011	.08	1.166	mg/L	108.5	85	115	1.53	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.995	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.09	0.09			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.066	0.066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0011		1.09	mg/L	108.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0011	U	1.105	mg/L	110.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0011	U	1.112	mg/L	111.1	70	130	0.63	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.02002		.01944	mg/L	97.1	90	110			
WG367158ICB	ICB	07/08/14 11:56				.00044	mg/L		-0.0012	0.0012			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.01		.01052	mg/L	105.2	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.01	.0007	.01119	mg/L	104.9	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.01	.0007	.0113	mg/L	106	70	130	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.02002		.01967	mg/L	98.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0012	0.0012			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00088	0.00088			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.01		.0109	mg/L	109	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.01	U	.01075	mg/L	107.5	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.01	U	.01084	mg/L	108.4	70	130	0.83	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05124	mg/L	102.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				.00024	mg/L		-0.0006	0.0006			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.04925	mg/L	98.3	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	.0366	.09534	mg/L	117.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	.0366	.09298	mg/L	112.5	70	130	2.51	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04953	mg/L	99.1	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0006	0.0006			
WG367077LRB	LRB	07/08/14 22:22				.00022	mg/L		-0.00044	0.00044			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.0525	mg/L	104.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	.0056	.05412	mg/L	96.8	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	.0056	.05528	mg/L	99.2	70	130	2.12	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.982	mg/L	99.1	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.009	0.009			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5		.5032	mg/L	100.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5	U	.5072	mg/L	101.4	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5	U	.5111	mg/L	102.2	85	115	0.77	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.976	mg/L	98.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.009	0.009			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0066	0.0066			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5		.5114	mg/L	102.3	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5	.023	.5301	mg/L	101.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5	.023	.5346	mg/L	102.3	70	130	0.85	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04683	mg/L	93.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.04885	mg/L	97.6	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.04817	mg/L	96.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.04815	mg/L	96.2	70	130	0.04	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04748	mg/L	95	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				.000058	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04834	mg/L	96.6	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.00032	.047	mg/L	93.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.00032	.04697	mg/L	93.2	70	130	0.06	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366943													
WG366943ICV	ICV	07/02/14 12:15	II140701-2	2		2.018	mg/L	100.9	95	105			
WG366943ICB	ICB	07/02/14 12:21				U	mg/L		-0.12	0.12			
WG366943LFB	LFB	07/02/14 12:34	II140611-2	.999		1	mg/L	100.1	85	115			
L19116-01AS	AS	07/02/14 12:55	II140611-2	.999	U	1.009	mg/L	101	85	115			
L19116-01ASD	ASD	07/02/14 12:58	II140611-2	.999	U	.997	mg/L	99.8	85	115	1.2	20	
L19162-03AS	AS	07/02/14 13:33	II140611-2	4.995	U	4.66	mg/L	93.3	85	115			
L19162-03ASD	ASD	07/02/14 13:36	II140611-2	4.995	U	4.61	mg/L	92.3	85	115	1.08	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.003	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.12	0.12			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.088	0.088			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.999		1.034	mg/L	103.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.999	U	1.03	mg/L	103.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.999	U	1.046	mg/L	104.7	70	130	1.54	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.033	mg/L	101.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.03	0.03			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.509	mg/L	101.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	.14	.655	mg/L	102.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	.14	.659	mg/L	103.7	85	115	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.004	mg/L	100.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.506	mg/L	101.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.03	.549	mg/L	103.7	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.03	.549	mg/L	103.7	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04975	mg/L	99.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.05194	mg/L	103.7	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	U	.05221	mg/L	104.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	U	.05176	mg/L	103.3	70	130	0.87	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.0509	mg/L	101.8	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.05142	mg/L	102.6	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	U	.04837	mg/L	96.5	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	U	.04867	mg/L	97.1	70	130	0.62	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		100.25	mg/L	100.3	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	67.98099		72.71	mg/L	107	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	67.98099	8.2	80.66	mg/L	106.6	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	67.98099	8.2	79.8	mg/L	105.3	85	115	1.07	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		99.24	mg/L	99.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	67.98099		74.57	mg/L	109.7	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	67.98099	48.2	121.2	mg/L	107.4	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	67.98099	48.2	123.2	mg/L	110.3	70	130	1.64	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		31.2	mg/L	104	90	110			
L19147-01DUP	DUP	07/08/14 18:31			2.23	2.22	mg/L				0.4	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	2.15	33.1	mg/L	103.2	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.0511	mg/L	102.2	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05243	mg/L	104.8	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0009	.05437	mg/L	106.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0009	.05264	mg/L	103.4	70	130	3.23	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04946	mg/L	98.9	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05041	mg/L	100.7	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.05114	mg/L	102.2	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.05084	mg/L	101.6	70	130	0.59	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04791	mg/L	95.8	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05222	mg/L	104.3	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0003	.05265	mg/L	104.6	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0003	.0522	mg/L	103.7	70	130	0.86	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04861	mg/L	97.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04997	mg/L	99.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.00111	.05032	mg/L	98.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.00111	.04976	mg/L	97.2	70	130	1.12	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975LCSW2	LCSW	07/02/14 16:36	PCN44568	1408.8		1453.8	umhos/cm	103.2	90	110			
WG366975LCSW5	LCSW	07/02/14 19:50	PCN44568	1408.8		1428.3	umhos/cm	101.4	90	110			
L19130-01DUP	DUP	07/02/14 21:33			840	840	umhos/cm				0	20	
L19134-07DUP	DUP	07/02/14 22:53			234	234	umhos/cm				0	20	
WG366975LCSW8	LCSW	07/02/14 22:58	PCN44568	1408.8		1406.9	umhos/cm	99.9	90	110			
WG366975LCSW11	LCSW	07/03/14 2:18	PCN44568	1408.8		1391.6	umhos/cm	98.8	90	110			
WG366975LCSW14	LCSW	07/03/14 5:58	PCN44568	1408.8		1372.2	umhos/cm	97.4	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05178	mg/L	103.6	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05		.05176	mg/L	103.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05	U	.05239	mg/L	104.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05	U	.05087	mg/L	101.7	70	130	2.94	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05084	mg/L	101.7	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				.00107	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05		.05111	mg/L	102.2	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05	U	.05103	mg/L	102.1	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05	U	.0512	mg/L	102.4	70	130	0.33	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367189													
WG367189ICV	ICV	07/08/14 12:48	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367189ICB	ICB	07/08/14 12:48				U	mg/L		-0.003	0.003			
WG367086LRB	LRB	07/08/14 12:49				U	mg/L		-0.003	0.003			
WG367086LFB	LFB	07/08/14 12:50	WI140702-2	.2		.1959	mg/L	98	90	110			
L19129-03DUP	DUP	07/08/14 13:04			U	U	mg/L				0	20	RA
L19130-01LFM	LFM	07/08/14 13:05	WI140702-2	.2	U	.2006	mg/L	100.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L19130***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367189													
WG367189ICV	ICV	07/08/14 12:48	WI140702-5	.3		.2924	mg/L	97.5	90	110			
WG367189ICB	ICB	07/08/14 12:48				U	mg/L		-0.003	0.003			
WG367191													
WG367110LRB	LRB	07/08/14 13:24				U	mg/L		-0.003	0.003			
WG367110LFB	LFB	07/08/14 13:25	WI140702-4	.2		.2009	mg/L	100.5	90	110			
L19242-02LFM	LFM	07/08/14 14:21	WI140702-4	.2	U	.2088	mg/L	104.4	90	110			
L19242-02DUP	DUP	07/08/14 14:22			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	1.5		1.54	mg/L	102.7	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L19147-01DUP	DUP	07/08/14 18:31			.37	.37	mg/L				0	20	RA
L19147-02AS	AS	07/08/14 19:06	WI140610-6	1.5	.31	1.84	mg/L	102	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.05	mg/L	102.5	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.001		1.03	mg/L	102.9	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.001	U	1.03	mg/L	102.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.001	U	1.06	mg/L	105.9	85	115	2.87	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.03	mg/L	101.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.001		1.04	mg/L	103.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.001	U	1.03	mg/L	102.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.001	U	1.03	mg/L	102.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.994	mg/L	99.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.06	0.06			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0014		1.037	mg/L	103.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0014	.19	1.2	mg/L	100.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0014	.19	1.212	mg/L	102.1	85	115	1	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.965	mg/L	98.3	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.06	0.06			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.044	0.044			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0014		1.046	mg/L	104.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0014	U	1.021	mg/L	102	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0014	U	1.044	mg/L	104.3	70	130	2.23	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05149	mg/L	103	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05298	mg/L	105.9	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.05505	mg/L	110	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.05483	mg/L	109.6	70	130	0.4	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05216	mg/L	104.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				.00016	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05099	mg/L	101.9	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.0002	.05115	mg/L	101.8	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.0002	.05106	mg/L	101.6	70	130	0.18	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.0072	mg/L	100.4	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.024	0.024			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.002		.9971	mg/L	99.5	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.002	.093	1.095	mg/L	100	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.002	.093	1.094	mg/L	99.9	85	115	0.09	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9815	mg/L	99.1	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.024	0.024			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.0176	0.0176			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.002		1.01	mg/L	100.8	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.002	.018	1.023	mg/L	100.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.002	.018	1.037	mg/L	101.7	70	130	1.36	20	

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ACZ Project ID: ***L19130***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		97.21	mg/L	97.2	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	50.00131		49.6	mg/L	99.2	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	50.00131	.6	50	mg/L	98.8	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	50.00131	.6	49.5	mg/L	97.8	85	115	1.01	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		96.61	mg/L	96.6	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	50.00131		51.21	mg/L	102.4	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	50.00131	14.5	65.07	mg/L	101.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	50.00131	14.5	65.85	mg/L	102.7	70	130	1.19	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04996	mg/L	99.9	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0501		.05154	mg/L	102.9	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0501	.0005	.05353	mg/L	105.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0501	.0005	.05268	mg/L	104.2	70	130	1.6	20	
WG367303													
WG367303ICV	ICV	07/10/14 11:18	MS140513-1	.05		.04991	mg/L	99.8	90	110			
WG367303ICB	ICB	07/10/14 11:21				U	mg/L		-0.0015	0.0015			
WG367303LFB	LFB	07/10/14 11:24	MS140625-3	.0501		.05145	mg/L	102.7	85	115			
L19107-01AS	AS	07/10/14 12:25	MS140625-3	.0501	U	.05073	mg/L	101.3	70	130			
L19107-01ASD	ASD	07/10/14 12:28	MS140625-3	.0501	U	.05165	mg/L	103.1	70	130	1.8	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05096	mg/L	101.9	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0501		.04911	mg/L	98	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0501	.6707	.7274	mg/L	113.2	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0501	.6707	.7184	mg/L	95.2	70	130	1.24	20	
WG367311													
WG367311ICV	ICV	07/10/14 19:01	MS140513-1	.05		.05276	mg/L	105.5	90	110			
WG367311ICB	ICB	07/10/14 19:04				U	mg/L		-0.0015	0.0015			
WG366912LRB	LRB	07/10/14 19:06				U	mg/L		-0.0011	0.0011			
WG366912LFB	LFB	07/10/14 19:09	MS140625-3	.0501		.05004	mg/L	99.9	85	115			
WG367077LRB	LRB	07/10/14 19:46				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/10/14 19:49	MS140625-3	.0501		.04926	mg/L	98.3	85	115			
L19147-01LFM	LFM	07/10/14 19:56	MS140625-3	.0501	.6923	.7275	mg/L	70.3	70	130			
L19147-01LFMD	LFMD	07/10/14 19:58	MS140625-3	.0501	.6923	.7368	mg/L	88.8	70	130	1.27	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG366851													
WG366851CCV1	CCV	07/01/14 13:19	HG140624-4	10		10.2	ng/L	102	76.5	123.4			
WG366851CCB1	CCB	07/01/14 13:24				U	ng/L		-0.5	0.5			
WG366851PQV	PQV	07/01/14 13:48	HG140624-6	.5		.65	ng/L	130	70	130			
WG366851LFB	LFB	07/01/14 13:53	HG140624-5	2		1.87	ng/L	93.5	71	125			
WG366851CCV2	CCV	07/01/14 14:43	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB2	CCB	07/01/14 14:48				U	ng/L		-0.5	0.5			
WG366851CCV3	CCV	07/01/14 16:35	HG140624-4	10		9.9	ng/L	99	76.5	123.4			
WG366851CCB3	CCB	07/01/14 16:40				U	ng/L		-0.5	0.5			
WG366851CCV4	CCV	07/01/14 17:36	HG140624-4	10		9.95	ng/L	99.5	76.5	123.4			
WG366851CCB4	CCB	07/01/14 17:41				U	ng/L		-0.5	0.5			
L19108-01MS	MS	07/01/14 17:51	HG5XPREP	50	U	9.4	ng/L	94	71	125			
L19108-01MSD	MSD	07/01/14 17:56	HG5XPREP	50	U	9.5	ng/L	95	71	125	1.06	24	
WG366851CCV5	CCV	07/01/14 18:11	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG366851CCB5	CCB	07/01/14 18:16				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L19130***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG367108													
WG367108CCV1	CCV	07/08/14 13:22	HG140624-4	10		9.82	ng/L	98.2	76.5	123.4			
WG367108CCB1	CCB	07/08/14 13:27				U	ng/L		-0.5	0.5			
WG367108PQV	PQV	07/08/14 13:32	HG140624-6	.5		.44	ng/L	88	70	130			
WG367108LFB	LFB	07/08/14 13:37	HG140624-5	2		1.91	ng/L	95.5	71	125			
L19129-01MS	MS	07/08/14 13:47	HG140624-5	2	.3	2.2	ng/L	95	71	125			
L19129-01MSD	MSD	07/08/14 13:52	HG140624-5	2	.3	2.18	ng/L	94	71	125	0.91	24	
WG367108CCV2	CCV	07/08/14 14:32	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB2	CCB	07/08/14 14:37				U	ng/L		-0.5	0.5			
WG367108CCV3	CCV	07/08/14 16:01	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB3	CCB	07/08/14 16:06				U	ng/L		-0.5	0.5			
WG367108CCV4	CCV	07/08/14 16:52	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB4	CCB	07/08/14 16:57				U	ng/L		-0.5	0.5			
WG367108CCV5	CCV	07/08/14 17:32	HG140624-4	10		10.1	ng/L	101	76.5	123.4			
WG367108CCB5	CCB	07/08/14 17:37				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.01998		.01882	mg/L	94.2	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0015	0.0015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0502		.04968	mg/L	99	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0502	.0038	.05588	mg/L	103.7	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0502	.0038	.05544	mg/L	102.9	70	130	0.79	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.01998		.01867	mg/L	93.4	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0015	0.0015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.0011	0.0011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0502		.04824	mg/L	96.1	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0502	.0006	.04872	mg/L	95.9	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0502	.0006	.04867	mg/L	95.8	70	130	0.1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05136	mg/L	102.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0018	0.0018			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05		.05233	mg/L	104.7	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05	U	.05205	mg/L	104.1	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05	U	.05035	mg/L	100.7	70	130	3.32	20	

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ACZ Project ID: ***L19130***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05061	mg/L	101.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0018	0.0018			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00132	0.00132			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05		.05045	mg/L	100.9	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05	.003	.05263	mg/L	99.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05	.003	.05292	mg/L	99.8	70	130	0.55	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367215													
WG367215ICV	ICV	07/08/14 22:09	WI140417-3	2.416		2.361	mg/L	97.7	90	110			
WG367215ICB	ICB	07/08/14 22:11				U	mg/L		-0.06	0.06			
WG367219													
WG367219LFB1	LFB	07/09/14 0:06	WI140215-3	2		1.953	mg/L	97.7	90	110			
L19129-02AS	AS	07/09/14 0:25	WI140215-3	2	1.14	3.058	mg/L	95.9	90	110			
L19129-03DUP	DUP	07/09/14 0:27			.76	.759	mg/L				0.1	20	
WG367219LFB2	LFB	07/09/14 0:40	WI140215-3	2		1.993	mg/L	99.7	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366944													
WG366944ICV	ICV	07/02/14 12:03	WI131021-1	1.003		1.025	mg/L	102.2	90	110			
WG366944ICB	ICB	07/02/14 12:06				U	mg/L		-0.15	0.15			
WG366993													
WG366993LFB1	LFB	07/02/14 16:52	WI140113-8	1		.977	mg/L	97.7	90	110			
WG366993LFB2	LFB	07/02/14 17:24	WI140113-8	1		.953	mg/L	95.3	90	110			
L19123-01AS	AS	07/02/14 17:41	WI140113-8	10	24.4	35.05	mg/L	106.5	90	110			
L19123-02DUP	DUP	07/02/14 17:46			.75	.789	mg/L				5.1	20	

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366975													
WG366975LCSW1	LCSW	07/02/14 16:34	PCN45265	5.99		6.04	units	100.8	5.89	6.09			
WG366975LCSW4	LCSW	07/02/14 19:49	PCN45265	5.99		6.1	units	101.8	5.89	6.09			
L19130-01DUP	DUP	07/02/14 21:33			8.6	8.65	units				0.6	20	
L19134-07DUP	DUP	07/02/14 22:53			8	8.03	units				0.4	20	
WG366975LCSW7	LCSW	07/02/14 22:56	PCN45265	5.99		6.1	units	101.8	5.89	6.09			

SPF Water Engineering

ACZ Project ID: ***L19130***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367218													
WG367218ICV	ICV	07/08/14 23:45	WI140620-3	.65228		.677	mg/L	103.8	90	110			
WG367218ICB	ICB	07/08/14 23:48				.013	mg/L		-0.03	0.03			
WG367221													
WG367167LRB	LRB	07/09/14 1:16				U	mg/L		-0.03	0.03			
WG367167LFB	LFB	07/09/14 1:17	WI140701-2	.5		.485	mg/L	97	90	110			
L19123-02LFM	LFM	07/09/14 1:35	WI140701-2	.5	.08	.584	mg/L	100.8	90	110			
L19129-01DUP	DUP	07/09/14 1:38			.02	.018	mg/L				10.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	20		19.84	mg/L	99.2	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	99.99364		100.6	mg/L	100.6	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	99.99364	1.1	102.6	mg/L	101.5	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	99.99364	1.1	100.9	mg/L	99.8	85	115	1.67	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	20		19.54	mg/L	97.7	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	99.99364		102.1	mg/L	102.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	99.99364	4.1	106.4	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	99.99364	4.1	107.7	mg/L	103.6	70	130	1.21	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366832													
WG366832PBW	PBW	07/01/14 9:15				U	mg/L		-20	20			
WG366832LCSW	LCSW	07/01/14 9:17	PCN46080	260		262	mg/L	100.8	80	120			
L19148-03DUP	DUP	07/01/14 10:15			U	U	mg/L				0	10	RA

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367050													
WG367050PBW	PBW	07/03/14 15:48				U	mg/L		-15	15			
WG367050LCSW	LCSW	07/03/14 15:49	PCN46082	160		147	mg/L	91.9	80	120			
L19130-04DUP	DUP	07/03/14 16:02			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.04	mg/L	102	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.3	0.3			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1.0009	U	1.06	mg/L	105.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		2.01	mg/L	100.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.3	0.3			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.22	0.22			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1.0009		1.06	mg/L	105.9	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1.0009	U	1.05	mg/L	104.9	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1.0009	U	1.06	mg/L	105.9	70	130	0.95	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05065	mg/L	101.3	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05082	mg/L	101.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0028	.05824	mg/L	110.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0028	.05836	mg/L	111	70	130	0.21	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05117	mg/L	102.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				.00019	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05125	mg/L	102.4	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.04783	mg/L	95.6	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.04789	mg/L	95.7	70	130	0.13	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.02002		.02028	mg/L	101.3	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.00015	0.00015			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.01002		.01044	mg/L	104.2	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.01002	U	.01031	mg/L	102.9	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.01002	U	.01028	mg/L	102.6	70	130	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.02002		.02046	mg/L	102.2	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.00015	0.00015			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00011	0.00011			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.01002		.01004	mg/L	100.2	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.01002	U	.00966	mg/L	96.4	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.01002	U	.009822	mg/L	98	70	130	1.66	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	100		98.64	mg/L	98.6	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.6	0.6			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	100.0393		100.7	mg/L	100.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	100.0393	175	271.2	mg/L	96.2	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	100.0393	175	267	mg/L	92	85	115	1.56	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	100		97.84	mg/L	97.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.6	0.6			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.44	0.44			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	100.0393		102.1	mg/L	102.1	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	100.0393	18.1	120.7	mg/L	102.6	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	100.0393	18.1	122	mg/L	103.9	70	130	1.07	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.9972	mg/L	99.9	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.015	0.015			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.5127	mg/L	102.4	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	.036	.5524	mg/L	103.2	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	.036	.5445	mg/L	101.6	85	115	1.44	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9695	mg/L	98.5	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.514	mg/L	102.7	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	.241	.753	mg/L	102.3	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	.241	.762	mg/L	104.1	70	130	1.19	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367124													
WG367124LFB1	LFB	07/07/14 18:11	WI140610-6	30		30.9	mg/L	103	90	110			
WG367124LFB2	LFB	07/08/14 2:51	WI140610-6	30		30.8	mg/L	102.7	90	110			
L19147-01DUP	DUP	07/08/14 18:31			23	22.9	mg/L				0.4	20	
L19147-02AS	AS	07/08/14 19:06	WI140610-6	30	14.9	45.8	mg/L	103	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05142	mg/L	102.8	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.0502		.05151	mg/L	102.6	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.0502	U	.0538	mg/L	107.2	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.0502	U	.05343	mg/L	106.4	70	130	0.69	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.05215	mg/L	104.3	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.0502		.04946	mg/L	98.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.0502	.0001	.04993	mg/L	99.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.0502	.0001	.04994	mg/L	99.3	70	130	0.02	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.0501		.04996	mg/L	99.7	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05206	mg/L	104	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	U	.05594	mg/L	111.8	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	U	.05547	mg/L	110.8	70	130	0.84	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.0501		.0514	mg/L	102.6	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05532	mg/L	110.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.05336	mg/L	106.6	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.05168	mg/L	103.3	70	130	3.2	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		2.0292	mg/L	101.5	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.015	0.015			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	1		1.017	mg/L	101.7	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	1	U	1.03	mg/L	103	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	1	U	1.035	mg/L	103.5	85	115	0.48	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.9955	mg/L	99.8	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.015	0.015			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.011	0.011			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	1		1.035	mg/L	103.5	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	1	U	1.025	mg/L	102.5	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	1	U	1.037	mg/L	103.7	70	130	1.16	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.04905	mg/L	98.1	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0003	0.0003			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05046	mg/L	100.8	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0019	.05446	mg/L	105	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0019	.05386	mg/L	103.8	70	130	1.11	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.04927	mg/L	98.5	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0003	0.0003			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00022	0.00022			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.04779	mg/L	95.5	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	U	.0492	mg/L	98.3	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	U	.04862	mg/L	97.1	70	130	1.19	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367158													
WG367158ICV	ICV	07/08/14 11:53	MS140513-1	.05		.05076	mg/L	101.5	90	110			
WG367158ICB	ICB	07/08/14 11:56				U	mg/L		-0.0006	0.0006			
WG367158LFB	LFB	07/08/14 12:00	MS140625-3	.05005		.05378	mg/L	107.5	85	115			
L19129-02AS	AS	07/08/14 12:59	MS140625-3	.05005	.0189	.07603	mg/L	114.1	70	130			
L19129-02ASD	ASD	07/08/14 13:03	MS140625-3	.05005	.0189	.07332	mg/L	108.7	70	130	3.63	20	

SPF Water Engineering

ACZ Project ID: ***L19130***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367206													
WG367206ICV	ICV	07/08/14 22:15	MS140513-1	.05		.0485	mg/L	97	90	110			
WG367206ICB	ICB	07/08/14 22:18				U	mg/L		-0.0006	0.0006			
WG367077LRB	LRB	07/08/14 22:22				U	mg/L		-0.00044	0.00044			
WG367077LFB	LFB	07/08/14 22:25	MS140625-3	.05005		.05093	mg/L	101.8	85	115			
L19147-01LFM	LFM	07/08/14 23:08	MS140625-3	.05005	.0005	.05256	mg/L	104	70	130			
L19147-01LFMD	LFMD	07/08/14 23:11	MS140625-3	.05005	.0005	.05245	mg/L	103.8	70	130	0.21	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366859													
WG366859ICV	ICV	07/01/14 15:21	II140512-2	2		1.954	mg/L	97.7	95	105			
WG366859ICB	ICB	07/01/14 15:27				U	mg/L		-0.03	0.03			
WG366859LFB	LFB	07/01/14 15:39	II140611-2	.5005		.517	mg/L	103.3	85	115			
L19130-02AS	AS	07/01/14 16:44	II140611-2	.5005	U	.524	mg/L	104.7	85	115			
L19130-02ASD	ASD	07/01/14 16:54	II140611-2	.5005	U	.518	mg/L	103.5	85	115	1.15	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366988													
WG366988ICV	ICV	07/03/14 13:33	II140624-2	2		1.944	mg/L	97.2	95	105			
WG366988ICB	ICB	07/03/14 13:39				U	mg/L		-0.03	0.03			
WG366919LRB	LRB	07/03/14 13:51				U	mg/L		-0.022	0.022			
WG366919LFB	LFB	07/03/14 13:54	II140611-2	.5005		.532	mg/L	106.3	85	115			
L19107-02LFM	LFM	07/03/14 14:44	II140611-2	.5005	U	.521	mg/L	104.1	70	130			
L19107-02LFMD	LFMD	07/03/14 14:47	II140611-2	.5005	U	.529	mg/L	105.7	70	130	1.52	20	

SPF Water Engineering ACZ Project ID: ***L19130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19130-01	WG367158	Manganese, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366832	Residue, Filterable (TDS) @180C	SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L19130-02	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366832	Residue, Filterable (TDS) @180C	SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering

ACZ Project ID: ***L19130***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19130-03	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366832	Residue, Filterable (TDS) @180C	SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366975	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L19130-04	WG367124	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367189	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367191	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367124	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367221	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366832	Residue, Filterable (TDS) @180C	SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367050	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19130
Date Received: 06/27/2014 09:38
Received By: mtb
Date Printed: 6/27/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19924	3.2	12	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc. L19130

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 2nd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
PW-4	6/25/14 10:40	GW	8	X							
PW-4-DUP	6/25/14 10:50	GW	8	X							
59766	6/25/14 11:37	GW	8	X							
PW-1	6/25/14 13:50	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	6-26-14 9:10	[signature]	6.27.14 9:30

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19130 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 18, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19171

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 01, 2014. This project has been assigned to ACZ's project number, L19171. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19171. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 17, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 18, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19171

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from SPF Water Engineering on July 1, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19171. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19171. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-4

ACZ Sample ID: ***L19171-01***
Date Sampled: *06/27/14 09:11*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:00	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 12:33	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/14 9:21	las
Total Hot Plate Digestion	M200.2 ICP								07/03/14 12:25	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-4

ACZ Sample ID: ***L19171-01***
Date Sampled: *06/27/14 09:11*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.07	B		mg/L	0.03	0.2	07/02/14 18:17	jjc
Aluminum, total	M200.7 ICP	1	0.60		*	mg/L	0.03	0.2	07/07/14 13:17	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/17/14 10:04	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/14 21:50	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0109			mg/L	0.0002	0.001	07/17/14 10:04	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0114			mg/L	0.0002	0.001	07/10/14 21:50	msh
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	07/02/14 18:17	jjc
Barium, total	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	07/07/14 13:17	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	07/17/14 10:04	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/10/14 21:50	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 12:15	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 13:17	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/02/14 18:17	jjc
Boron, total	M200.7 ICP	1	0.14			mg/L	0.01	0.05	07/07/14 13:17	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:04	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:50	msh
Calcium, dissolved	M200.7 ICP	1	3.5			mg/L	0.1	0.5	07/02/14 18:17	jjc
Calcium, total	M200.7 ICP	1	3.9			mg/L	0.1	0.5	07/07/14 13:17	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/17/14 10:04	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/10/14 21:50	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00038			mg/L	0.00005	0.0003	07/17/14 10:04	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	07/10/14 21:50	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/17/14 10:04	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 21:50	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:17	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:17	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.02	0.05	07/02/14 18:17	jjc
Iron, total	M200.7 ICP	1	0.25			mg/L	0.02	0.05	07/07/14 13:17	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:04	pmc
Lead, total	M200.8 ICP-MS	1	0.0006			mg/L	0.0001	0.0005	07/10/14 21:50	msh
Lithium, dissolved	M200.7 ICP	1	0.090			mg/L	0.008	0.04	07/02/14 18:17	jjc
Lithium, total	M200.7 ICP	1	0.090			mg/L	0.008	0.04	07/07/14 13:17	aeb
Magnesium, dissolved	M200.7 ICP	1	0.2	B		mg/L	0.2	1	07/02/14 18:17	jjc
Magnesium, total	M200.7 ICP	1	0.2	B		mg/L	0.2	1	07/07/14 13:17	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0055			mg/L	0.0005	0.003	07/17/14 10:04	pmc
Manganese, total	M200.8 ICP-MS	1	0.0088			mg/L	0.0005	0.003	07/11/14 21:52	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/10/14 14:47	las
Mercury, total	M1631, Atomic Fluorescence	2	0.8	B	*	ng/L	0.4	1	07/09/14 12:25	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0083			mg/L	0.0005	0.003	07/17/14 10:04	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0087			mg/L	0.0005	0.003	07/10/14 21:50	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/17/14 10:04	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/14 21:50	msh
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	07/02/14 18:17	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-4

ACZ Sample ID: ***L19171-01***
Date Sampled: *06/27/14 09:11*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.7	B		mg/L	0.2	1	07/07/14 13:17	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:17	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:17	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0003	07/17/14 10:04	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/10/14 21:50	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:04	pmc
Silver, total	M200.8 ICP-MS	1	0.00005	B		mg/L	0.00005	0.0003	07/10/14 21:50	msh
Sodium, dissolved	M200.7 ICP	1	141			mg/L	0.2	1	07/02/14 18:17	jjc
Sodium, total	M200.7 ICP	1	146			mg/L	0.2	1	07/07/14 13:17	aeb
Strontium, dissolved	M200.7 ICP	1	0.018	B		mg/L	0.005	0.03	07/02/14 18:17	jjc
Strontium, total	M200.7 ICP	1	0.021	B		mg/L	0.005	0.03	07/07/14 13:17	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:04	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:50	msh
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/17/14 10:04	pmc
Tin, total	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	07/10/14 21:50	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/14 18:17	jjc
Titanium, total	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	07/07/14 13:17	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:04	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/10/14 21:50	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/17/14 10:04	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	07/10/14 21:50	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/14 18:17	jjc
Zinc, total	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/07/14 13:17	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: GW-4

ACZ Sample ID: ***L19171-01***
Date Sampled: *06/27/14 09:11*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	155			mg/L	2	20	07/03/14 0:00	abd
Carbonate as CaCO3		1	11	B		mg/L	2	20	07/03/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Total Alkalinity		1	166			mg/L	2	20	07/03/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	26.7		*	mg/L	0.5	2.5	07/10/14 3:53	jlf
Conductivity @25C	SM2510B	1	671			umhos/cm	1	10	07/03/14 22:53	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:16	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:42	pjb
Fluoride	M300.0 - Ion Chromatography	1	2.21		*	mg/L	0.05	0.25	07/10/14 3:53	jlf
Hardness as CaCO3	SM2340B - Calculation		9.6			mg/L	0.8	4	07/18/14 9:38	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/09/14 23:44	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/09/14 13:48	mpb
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	07/03/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/03/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	07/09/14 12:19	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	390			mg/L	10	20	07/02/14 9:46	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1	14	B	*	mg/L	5	20	07/02/14 8:43	nml
Sulfate	M300.0 - Ion Chromatography	1	86.8		*	mg/L	0.5	2.5	07/10/14 3:53	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L19171-02***
Date Sampled: *06/27/14 10:46*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:00	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 12:40	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/14 9:32	las
Total Hot Plate Digestion	M200.2 ICP								07/03/14 12:48	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L19171-02***
Date Sampled: *06/27/14 10:46*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/14 18:20	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/07/14 13:27	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/17/14 10:14	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/14 21:54	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0228			mg/L	0.0002	0.001	07/17/14 10:14	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0228			mg/L	0.0002	0.001	07/10/14 21:54	msh
Barium, dissolved	M200.7 ICP	1	0.041			mg/L	0.003	0.02	07/02/14 18:20	jjc
Barium, total	M200.7 ICP	1	0.042			mg/L	0.003	0.02	07/07/14 13:27	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:14	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 21:54	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 12:18	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 13:27	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/02/14 18:20	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	07/07/14 13:27	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:14	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:54	msh
Calcium, dissolved	M200.7 ICP	1	41.4			mg/L	0.1	0.5	07/02/14 18:20	jjc
Calcium, total	M200.7 ICP	1	43.4			mg/L	0.1	0.5	07/07/14 13:27	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	07/17/14 10:14	pmc
Chromium, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.002	07/10/14 21:54	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00016	B		mg/L	0.00005	0.0003	07/17/14 10:14	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/10/14 21:54	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/17/14 10:14	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 21:54	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:20	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:27	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/14 18:20	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	07/07/14 13:27	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:14	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:54	msh
Lithium, dissolved	M200.7 ICP	1	0.035	B		mg/L	0.008	0.04	07/02/14 18:20	jjc
Lithium, total	M200.7 ICP	1	0.034	B		mg/L	0.008	0.04	07/07/14 13:27	aeb
Magnesium, dissolved	M200.7 ICP	1	10			mg/L	0.2	1	07/02/14 18:20	jjc
Magnesium, total	M200.7 ICP	1	10.3			mg/L	0.2	1	07/07/14 13:27	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/17/14 10:14	pmc
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	07/10/14 21:54	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	07/10/14 15:00	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/09/14 12:40	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0024	B		mg/L	0.0005	0.003	07/17/14 10:14	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0025	B		mg/L	0.0005	0.003	07/10/14 21:54	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/17/14 10:14	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/14 21:54	msh
Potassium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	07/02/14 18:20	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L19171-02***
Date Sampled: *06/27/14 10:46*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	07/07/14 13:27	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:20	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:27	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	07/17/14 10:14	pmc
Selenium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0003	07/10/14 21:54	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:14	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 21:54	msh
Sodium, dissolved	M200.7 ICP	1	23.2			mg/L	0.2	1	07/02/14 18:20	jjc
Sodium, total	M200.7 ICP	1	23.9			mg/L	0.2	1	07/07/14 13:27	aeb
Strontium, dissolved	M200.7 ICP	1	0.218			mg/L	0.005	0.03	07/02/14 18:20	jjc
Strontium, total	M200.7 ICP	1	0.220			mg/L	0.005	0.03	07/07/14 13:27	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:14	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:54	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/17/14 10:14	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/14 21:54	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/14 18:20	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 13:27	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	07/17/14 10:14	pmc
Uranium, total	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	07/10/14 21:54	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0197			mg/L	0.0002	0.001	07/17/14 10:14	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0207			mg/L	0.0002	0.001	07/10/14 21:54	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/14 18:20	jjc
Zinc, total	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/07/14 13:27	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: 59761

ACZ Sample ID: ***L19171-02***
Date Sampled: *06/27/14 10:46*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	127			mg/L	2	20	07/03/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Total Alkalinity		1	127			mg/L	2	20	07/03/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	13.3		*	mg/L	0.5	2.5	07/10/14 4:11	jlf
Conductivity @25C	SM2510B	1	405			umhos/cm	1	10	07/03/14 23:02	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:18	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:44	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.52		*	mg/L	0.05	0.25	07/10/14 4:11	jlf
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	0.8	4	07/18/14 9:39	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.73			mg/L	0.02	0.1	07/09/14 23:47	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/09/14 13:50	mpb
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/03/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/03/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B		mg/L	0.01	0.05	07/09/14 12:20	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	290			mg/L	10	20	07/02/14 9:48	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/02/14 8:45	nml
Sulfate	M300.0 - Ion Chromatography	1	27.3		*	mg/L	0.5	2.5	07/10/14 4:11	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L19171-03***
Date Sampled: *06/27/14 12:01*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 12:55	mpb
Total Hot Plate Digestion	M200.2 ICP								07/03/14 13:10	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/14 9:43	las

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L19171-03***
Date Sampled: *06/27/14 12:01*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/14 18:23	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/07/14 13:30	aeb
Antimony, dissolved	M200.8 ICP-MS	50		U		mg/L	0.02	0.1	07/17/14 10:18	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	07/10/14 21:57	msh
Arsenic, dissolved	M200.8 ICP-MS	50	3.90			mg/L	0.01	0.05	07/17/14 10:18	pmc
Arsenic, total	M200.8 ICP-MS	50	4.63			mg/L	0.01	0.05	07/11/14 21:56	msh
Barium, dissolved	M200.7 ICP	1	0.065			mg/L	0.003	0.02	07/02/14 18:23	jjc
Barium, total	M200.7 ICP	1	0.063			mg/L	0.003	0.02	07/07/14 13:30	aeb
Beryllium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.003	0.01	07/17/14 10:18	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/10/14 21:57	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 12:21	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 13:30	aeb
Boron, dissolved	M200.7 ICP	1	0.59			mg/L	0.01	0.05	07/02/14 18:23	jjc
Boron, total	M200.7 ICP	1	0.60			mg/L	0.01	0.05	07/07/14 13:30	aeb
Cadmium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.005	0.03	07/17/14 10:18	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:57	msh
Calcium, dissolved	M200.7 ICP	1	177			mg/L	0.1	0.5	07/02/14 18:23	jjc
Calcium, total	M200.7 ICP	1	178			mg/L	0.1	0.5	07/07/14 13:30	aeb
Chromium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.03	0.1	07/17/14 10:18	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/10/14 21:57	msh
Cobalt, dissolved	M200.8 ICP-MS	50	0.101			mg/L	0.003	0.01	07/17/14 10:18	pmc
Cobalt, total	M200.8 ICP-MS	1	0.09979			mg/L	0.00005	0.0003	07/10/14 21:57	msh
Copper, dissolved	M200.8 ICP-MS	50		U		mg/L	0.03	0.1	07/17/14 10:18	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 21:57	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:23	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:30	aeb
Iron, dissolved	M200.7 ICP	1	189			mg/L	0.02	0.05	07/02/14 18:23	jjc
Iron, total	M200.7 ICP	1	186			mg/L	0.02	0.05	07/07/14 13:30	aeb
Lead, dissolved	M200.8 ICP-MS	50		U		mg/L	0.005	0.03	07/17/14 10:18	pmc
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	07/10/14 21:57	msh
Lithium, dissolved	M200.7 ICP	1	0.726			mg/L	0.008	0.04	07/02/14 18:23	jjc
Lithium, total	M200.7 ICP	1	0.722			mg/L	0.008	0.04	07/07/14 13:30	aeb
Magnesium, dissolved	M200.7 ICP	1	9.4			mg/L	0.2	1	07/02/14 18:23	jjc
Magnesium, total	M200.7 ICP	1	9.3			mg/L	0.2	1	07/07/14 13:30	aeb
Manganese, dissolved	M200.8 ICP-MS	50	1.53			mg/L	0.03	0.1	07/17/14 10:18	pmc
Manganese, total	M200.8 ICP-MS	50	1.60			mg/L	0.03	0.1	07/11/14 21:56	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	07/10/14 15:05	las
Mercury, total	M1631, Atomic Fluorescence	1	2.9			ng/L	0.2	0.5	07/09/14 12:45	las
Molybdenum, dissolved	M200.8 ICP-MS	50		U		mg/L	0.03	0.1	07/17/14 10:18	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.003	07/10/14 21:57	msh
Nickel, dissolved	M200.8 ICP-MS	50	0.12	B		mg/L	0.03	0.2	07/17/14 10:18	pmc
Nickel, total	M200.8 ICP-MS	1	0.1168			mg/L	0.0006	0.003	07/10/14 21:57	msh
Potassium, dissolved	M200.7 ICP	1	6.6			mg/L	0.2	1	07/02/14 18:23	jjc

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L19171-03***
Date Sampled: *06/27/14 12:01*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.5			mg/L	0.2	1	07/07/14 13:30	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 18:23	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:30	aeb
Selenium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.005	0.01	07/17/14 10:18	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/10/14 21:57	msh
Silver, dissolved	M200.8 ICP-MS	50		U		mg/L	0.003	0.01	07/17/14 10:18	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 21:57	msh
Sodium, dissolved	M200.7 ICP	1	264			mg/L	0.2	1	07/02/14 18:23	jjc
Sodium, total	M200.7 ICP	1	267			mg/L	0.2	1	07/07/14 13:30	aeb
Strontium, dissolved	M200.7 ICP	1	3.970			mg/L	0.005	0.03	07/02/14 18:23	jjc
Strontium, total	M200.7 ICP	1	3.830			mg/L	0.005	0.03	07/07/14 13:30	aeb
Thallium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.005	0.03	07/17/14 10:18	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 21:57	msh
Tin, dissolved	M200.8 ICP-MS	50		U	*	mg/L	0.005	0.03	07/17/14 10:18	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/14 21:57	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/14 18:23	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 13:30	aeb
Uranium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.005	0.03	07/17/14 10:18	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/10/14 21:57	msh
Vanadium, dissolved	M200.8 ICP-MS	50		U		mg/L	0.01	0.05	07/17/14 10:18	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	07/10/14 21:57	msh
Zinc, dissolved	M200.7 ICP	1	0.78			mg/L	0.01	0.05	07/02/14 18:23	jjc
Zinc, total	M200.7 ICP	1	0.79		*	mg/L	0.01	0.05	07/07/14 13:30	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L19171-03***
Date Sampled: *06/27/14 12:01*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	22			mg/L	2	20	07/03/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Total Alkalinity		1	22		*	mg/L	2	20	07/03/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	10	22.6	B	*	mg/L	5	25	07/10/14 4:29	jlf
Conductivity @25C	SM2510B	1	2200			umhos/cm	1	10	07/03/14 23:10	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:20	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:46	pjb
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	0.5	2.5	07/10/14 4:29	jlf
Hardness as CaCO3	SM2340B - Calculation		481			mg/L	0.8	4	07/18/14 9:39	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	07/11/14 22:43	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.81		*	mg/L	0.05	0.2	07/09/14 13:54	mpb
pH (lab)	SM4500H+ B									
pH		1	6.7	H		units	0.1	0.1	07/03/14 0:00	abd
pH measured at		1	22			C	0.1	0.1	07/03/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.68			mg/L	0.01	0.05	07/09/14 12:38	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	1800			mg/L	10	20	07/02/14 9:50	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1	125		*	mg/L	5	20	07/02/14 8:47	nml
Sulfate	M300.0 - Ion Chromatography	20	1220		*	mg/L	10	50	07/10/14 11:48	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: CYANIDE BLANK

ACZ Sample ID: ***L19171-04***
Date Sampled: *06/27/14 00:00*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:01	tcd

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:21	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:47	pjb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: CYANIDE BLANK

ACZ Sample ID: ***L19171-05***
Date Sampled: *06/27/14 00:00*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:01	tcd

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:22	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:48	pjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19171***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024PBW1	PBW	07/03/14 12:30				U	mg/L		-20	20			
WG367024LCSW3	LCSW	07/03/14 12:49	WC140630-	820.0001		819.1	mg/L	99.9	90	110			
WG367024LCSW6	LCSW	07/03/14 15:34	WC140630-	820.0001		811.8	mg/L	99	90	110			
WG367024PBW2	PBW	07/03/14 15:43				U	mg/L		-20	20			
WG367024LCSW9	LCSW	07/03/14 18:16	WC140630-	820.0001		825.9	mg/L	100.7	90	110			
WG367024PBW3	PBW	07/03/14 18:25				U	mg/L		-20	20			
L19169-03DUP	DUP	07/03/14 21:34			37	37.5	mg/L				1.3	20	
WG367024LCSW12	LCSW	07/03/14 21:53	WC140630-	820.0001		828.6	mg/L	101	90	110			
WG367024PBW4	PBW	07/03/14 22:02				U	mg/L		-20	20			
WG367024LCSW15	LCSW	07/04/14 1:43	WC140630-	820.0001		832	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.063	mg/L	103.2	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.09	0.09			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1.0011		1.072	mg/L	107.1	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1.0011	U	1.11	mg/L	110.9	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1.0011	U	1.097	mg/L	109.6	85	115	1.18	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.976	mg/L	98.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.09	0.09			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.066	0.066			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0011		1.042	mg/L	104.1	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0011	65.1	64.74	mg/L	-36	70	130			M3
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0011	65.1	63.98	mg/L	-111.9	70	130	1.18	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.02002		.01984	mg/L	99.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0012	0.0012			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.02		.01876	mg/L	93.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.02	U	.01864	mg/L	93.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.02	U	.01894	mg/L	94.7	70	130	1.6	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.02002		.01961	mg/L	98	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0012	0.0012			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00088	0.00088			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.01		.01013	mg/L	101.3	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.01	U	.00994	mg/L	99.4	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.01	U	.01022	mg/L	102.2	70	130	2.78	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05342	mg/L	106.8	90	110			
WG367398ICB	ICB	07/17/14 9:51				.00032	mg/L		-0.0006	0.0006			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09414	mg/L	94.1	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0109	.1074	mg/L	96.5	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0109	.1026	mg/L	91.7	70	130	4.57	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05047	mg/L	100.9	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0006	0.0006			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00044	0.00044			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.052	mg/L	103.8	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	.0002	.04896	mg/L	97.3	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	.0002	.05178	mg/L	103	70	130	5.6	20	
WG367480													
WG367480ICV	ICV	07/11/14 21:39	MS140513-1	.05		.05111	mg/L	102.2	90	110			
WG367480ICB	ICB	07/11/14 21:42				U	mg/L		-0.0006	0.0006			
WG367318LRB	LRB	07/11/14 21:46				U	mg/L		-0.00044	0.00044			
WG367318LFB	LFB	07/11/14 21:49	MS140625-3	.0501		.05357	mg/L	106.9	85	115			
L19202-03LFM	LFM	07/11/14 22:06	MS140625-3	.0501	U	.05111	mg/L	102	70	130			
L19202-03LFMD	LFMD	07/11/14 22:09	MS140625-3	.0501	U	.05036	mg/L	100.5	70	130	1.48	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.016	mg/L	100.8	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.009	0.009			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	.5		.4926	mg/L	98.5	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	.5	.004	.503	mg/L	99.8	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	.5	.004	.501	mg/L	99.4	85	115	0.4	20	

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ACZ Project ID: ***L19171***

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9568	mg/L	97.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.009	0.009			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.0066	0.0066			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5		.4934	mg/L	98.7	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5	.012	.413	mg/L	80.2	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5	.012	.4108	mg/L	79.8	70	130	0.53	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.0512	mg/L	102.4	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09058	mg/L	90.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.00005	.09272	mg/L	92.6	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.00005	.09042	mg/L	90.3	70	130	2.51	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04719	mg/L	94.4	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04679	mg/L	93.5	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04342	mg/L	86.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04545	mg/L	90.8	70	130	4.57	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367071													
WG367071ICV	ICV	07/07/14 11:40	II140701-2	2		2.021	mg/L	101.1	95	105			
WG367071ICB	ICB	07/07/14 11:46				U	mg/L		-0.12	0.12			
WG367071LFB	LFB	07/07/14 11:59	II140611-2	.999		1.032	mg/L	103.3	85	115			
L19187-01AS	AS	07/07/14 12:27	II140611-2	.999	.05	1.029	mg/L	98	85	115			
L19187-01ASD	ASD	07/07/14 12:37	II140611-2	.999	.05	1.049	mg/L	100	85	115	1.92	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.026	mg/L	101.3	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.12	0.12			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.088	0.088			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.999		1.042	mg/L	104.3	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.999	U	.822	mg/L	82.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.999	U	.831	mg/L	83.2	70	130	1.09	20	

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ACZ Project ID: ***L19171***

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.049	mg/L	102.5	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.03	0.03			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	.5005		.513	mg/L	102.5	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	.5005	.02	.531	mg/L	102.1	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	.5005	.02	.523	mg/L	100.5	85	115	1.52	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.025	mg/L	101.3	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.03	0.03			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.022	0.022			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.504	mg/L	100.7	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	U	.412	mg/L	82.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	U	.428	mg/L	85.5	70	130	3.81	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05073	mg/L	101.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09124	mg/L	91.2	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09392	mg/L	93.9	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09334	mg/L	93.3	70	130	0.62	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04981	mg/L	99.6	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				.00012	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.04905	mg/L	97.9	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	U	.04647	mg/L	92.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	U	.0483	mg/L	96.4	70	130	3.86	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	100		100.83	mg/L	100.8	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.3	0.3			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	67.98099		71.24	mg/L	104.8	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	67.98099	176	238.9	mg/L	92.5	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	67.98099	176	238.9	mg/L	92.5	85	115	0	20	

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ACZ Project ID: ***L19171***

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		101	mg/L	101	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	67.98099		73.57	mg/L	108.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	67.98099	55	112.06	mg/L	83.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	67.98099	55	111.08	mg/L	82.5	70	130	0.88	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	30		31.3	mg/L	104.3	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	30		31.5	mg/L	105	90	110			
L19162-01DUP	DUP	07/10/14 1:48			2.11	2.16	mg/L				2.3	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	30	2.31	34	mg/L	105.6	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04995	mg/L	99.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09293	mg/L	92.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	U	.08991	mg/L	89.8	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	U	.08666	mg/L	86.6	70	130	3.68	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04864	mg/L	97.3	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04743	mg/L	94.8	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0009	.04611	mg/L	90.3	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0009	.04759	mg/L	93.3	70	130	3.16	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05025	mg/L	100.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09743	mg/L	97.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.00038	.09815	mg/L	97.7	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.00038	.09805	mg/L	97.6	70	130	0.1	20	

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ACZ Project ID: ***L19171***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05003	mg/L	100.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04961	mg/L	99.1	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.00047	.04846	mg/L	95.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.00047	.04984	mg/L	98.6	70	130	2.81	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024LCSW2	LCSW	07/03/14 12:35	PCN44568	1408.8		1447.6	umhos/cm	102.8	90	110			
WG367024LCSW5	LCSW	07/03/14 15:21	PCN44568	1408.8		1423.2	umhos/cm	101	90	110			
WG367024LCSW8	LCSW	07/03/14 18:02	PCN44568	1408.8		1409.9	umhos/cm	100.1	90	110			
L19169-03DUP	DUP	07/03/14 21:34			178	180.4	umhos/cm				1.3	20	
WG367024LCSW11	LCSW	07/03/14 21:39	PCN44568	1408.8		1401.8	umhos/cm	99.5	90	110			
WG367024LCSW14	LCSW	07/04/14 1:29	PCN44568	1408.8		1389.6	umhos/cm	98.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04874	mg/L	97.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.08796	mg/L	88	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.08391	mg/L	83.9	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.08084	mg/L	80.8	70	130	3.73	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.0481	mg/L	96.2	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05		.04651	mg/L	93	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05	U	.04257	mg/L	85.1	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05	U	.04442	mg/L	88.8	70	130	4.25	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367312													
WG367312ICV	ICV	07/09/14 22:03	WI140702-5	.3		.2939	mg/L	98	90	110			
WG367312ICB	ICB	07/09/14 22:04				U	mg/L		-0.003	0.003			
WG367316													
WG367276LRB	LRB	07/09/14 23:15				U	mg/L		-0.003	0.003			
WG367276LFB	LFB	07/09/14 23:15	WI140702-2	.2		.1909	mg/L	95.5	90	110			
L19171-01DUP	DUP	07/09/14 23:17			U	U	mg/L				0	20	RA
L19171-02LFM	LFM	07/09/14 23:19	WI140702-2	.2	U	.1693	mg/L	84.7	90	110			M2

SPF Water Engineering

ACZ Project ID: ***L19171***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367312													
WG367312ICV	ICV	07/09/14 22:03	WI140702-5	.3		.2939	mg/L	98	90	110			
WG367312ICB	ICB	07/09/14 22:04				U	mg/L		-0.003	0.003			
WG367313													
WG367258LRB	LRB	07/09/14 22:41				U	mg/L		-0.003	0.003			
WG367258LFB	LFB	07/09/14 22:42	WI140702-4	.2		.1822	mg/L	91.1	90	110			
L19171-01DUP	DUP	07/09/14 22:43			U	U	mg/L				0	20	RA
L19171-02LFM	LFM	07/09/14 22:45	WI140702-4	.2	U	.1736	mg/L	86.8	90	110			M2

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	1.5		1.58	mg/L	105.3	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	1.5		1.58	mg/L	105.3	90	110			
L19162-01DUP	DUP	07/10/14 1:48			.28	.29	mg/L				3.5	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	1.5	U	1.71	mg/L	114	90	110			M1

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.07	mg/L	103.5	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.3	0.3			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1.001		1	mg/L	99.9	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1.001	U	1.02	mg/L	101.9	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1.001	U	1.02	mg/L	101.9	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.01	mg/L	100.5	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.001		1.02	mg/L	101.9	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.001	U	.74	mg/L	73.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.001	U	.77	mg/L	76.9	70	130	3.97	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.017	mg/L	100.9	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.06	0.06			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1.0014		1.005	mg/L	100.4	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1.0014	U	.993	mg/L	99.2	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1.0014	U	.987	mg/L	98.6	85	115	0.61	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.97	mg/L	98.5	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.06	0.06			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.044	0.044			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0014		1.007	mg/L	100.6	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0014	1.16	1.939	mg/L	78.8	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0014	1.16	1.921	mg/L	77	70	130	0.93	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04988	mg/L	99.8	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09399	mg/L	94	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09645	mg/L	96.5	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09622	mg/L	96.2	70	130	0.24	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05053	mg/L	101.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04763	mg/L	95.2	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04796	mg/L	95.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04952	mg/L	98.9	70	130	3.2	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.032	mg/L	101.6	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.024	0.024			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1.002		.9743	mg/L	97.2	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1.002	.027	1.033	mg/L	100.4	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1.002	.027	1.031	mg/L	100.2	85	115	0.19	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.987	mg/L	99.4	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.024	0.024			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.0176	0.0176			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.002		.9928	mg/L	99.1	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.002	.03	.841	mg/L	80.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.002	.03	.836	mg/L	80.4	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	100		98.23	mg/L	98.2	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.6	0.6			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	50.00131		48.65	mg/L	97.3	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	50.00131	18.7	66.26	mg/L	95.1	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	50.00131	18.7	66.32	mg/L	95.2	85	115	0.09	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		98.08	mg/L	98.1	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	50.00131		50.11	mg/L	100.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	50.00131	123	160.78	mg/L	75.6	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	50.00131	123	159.08	mg/L	72.2	70	130	1.06	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05247	mg/L	104.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09686	mg/L	96.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.0055	.1028	mg/L	97.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.0055	.1027	mg/L	97.1	70	130	0.1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05249	mg/L	105	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				.0012	mg/L		-0.0011	0.0011			B7 BF
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.04923	mg/L	98.3	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	.0013	.04934	mg/L	95.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	.0013	.05116	mg/L	99.5	70	130	3.62	20	
WG367480													
WG367480ICV	ICV	07/11/14 21:39	MS140513-1	.05		.05023	mg/L	100.5	90	110			
WG367480ICB	ICB	07/11/14 21:42				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/11/14 21:46				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/11/14 21:49	MS140625-3	.0501		.04891	mg/L	97.6	85	115			
L19202-03LFM	LFM	07/11/14 22:06	MS140625-3	.0501	.0015	.05002	mg/L	96.8	70	130			
L19202-03LFMD	LFMD	07/11/14 22:09	MS140625-3	.0501	.0015	.04971	mg/L	96.2	70	130	0.62	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367326													
WG367326ICV	ICV	07/10/14 12:28	HG140624-4	10		10.5	ng/L	105	79	121			
WG367326ICB	ICB	07/10/14 12:33				U	ng/L		-0.5	0.5			
WG367364													
WG367364CCV1	CCV	07/10/14 13:34	HG140624-4	10		10.9	ng/L	109	76.5	123.4			
WG367364CCB1	CCB	07/10/14 13:39				U	ng/L		-0.5	0.5			
WG367364PQV	PQV	07/10/14 13:47	HG140624-6	.5		.5	ng/L	100	70	130			
WG367364LFB	LFB	07/10/14 13:52	HG140624-5	2		2.01	ng/L	100.5	71	125			
WG366767 PBW	PBW	07/10/14 13:57				U	ng/L		-0.5	0.5			
L19087-01MS	MS	07/10/14 14:07	HG140624-5	2	.2	2.35	ng/L	107.5	71	125			
L19087-01MSD	MSD	07/10/14 14:12	HG140624-5	2	.2	2.29	ng/L	104.5	71	125	2.59	24	
WG367364CCV2	CCV	07/10/14 14:37	HG140624-4	10		10.9	ng/L	109	76.5	123.4			
WG367364CCB2	CCB	07/10/14 14:42				U	ng/L		-0.5	0.5			
WG367364CCV3	CCV	07/10/14 15:20	HG140624-4	10		11.2	ng/L	112	76.5	123.4			
WG367364CCB3	CCB	07/10/14 15:25				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG367228													
WG367228CCV1	CCV	07/09/14 11:48	HG140624-4	10		9.01	ng/L	90.1	76.5	123.4			
WG367228CCB1	CCB	07/09/14 11:53				U	ng/L		-0.5	0.5			
WG367228PQV	PQV	07/09/14 11:58	HG140624-6	.5		.43	ng/L	86	70	130			
WG367228LFB	LFB	07/09/14 12:03	HG140624-5	2		1.79	ng/L	89.5	71	125			
L19171-01MS	MS	07/09/14 12:30	HG2XPREP	8	.8	4.34	ng/L	88.5	71	125			
L19171-01MSD	MSD	07/09/14 12:35	HG2XPREP	8	.8	4.38	ng/L	89.5	71	125	0.92	24	
WG367228CCV2	CCV	07/09/14 12:50	HG140624-4	10		9.24	ng/L	92.4	76.5	123.4			
WG367228CCB2	CCB	07/09/14 12:56				U	ng/L		-0.5	0.5			
WG367228CCV3	CCV	07/09/14 13:51	HG140624-4	10		9.24	ng/L	92.4	76.5	123.4			
WG367228CCB3	CCB	07/09/14 13:56				U	ng/L		-0.5	0.5			
WG367228CCV4	CCV	07/09/14 14:27	HG140624-4	10		9.39	ng/L	93.9	76.5	123.4			
WG367228CCB4	CCB	07/09/14 14:32				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.01998		.018	mg/L	90.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09064	mg/L	90.6	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0083	.1033	mg/L	95	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0083	.1041	mg/L	95.8	70	130	0.77	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.01998		.018	mg/L	90.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0502		.04504	mg/L	89.7	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0502	U	.04468	mg/L	89	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0502	U	.04556	mg/L	90.8	70	130	1.95	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05056	mg/L	101.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0018	0.0018			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1002		.09173	mg/L	91.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1002	U	.0873	mg/L	87.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1002	U	.08405	mg/L	83.9	70	130	3.79	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04992	mg/L	99.8	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0018	0.0018			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00132	0.00132			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05		.04873	mg/L	97.5	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05	U	.0447	mg/L	89.4	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05	U	.04625	mg/L	92.5	70	130	3.41	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367310													
WG367310ICV	ICV	07/09/14 22:10	WI140417-3	2.416		2.326	mg/L	96.3	90	110			
WG367310ICB	ICB	07/09/14 22:11				U	mg/L		-0.06	0.06			
WG367315													
WG367315LFB	LFB	07/09/14 23:43	WI140215-3	2		2.072	mg/L	103.6	90	110			
L19171-01AS	AS	07/09/14 23:45	WI140215-3	2	U	1.944	mg/L	97.2	90	110			
L19171-02DUP	DUP	07/09/14 23:48			1.73	1.741	mg/L				0.6	20	
WG367489													
WG367489ICV	ICV	07/11/14 21:27	WI140417-3	2.416		2.421	mg/L	100.2	90	110			
WG367489ICB	ICB	07/11/14 21:28				U	mg/L		-0.06	0.06			
WG367491													
WG367491LFB	LFB	07/11/14 22:37	WI140215-3	2		1.998	mg/L	99.9	90	110			
L19156-03AS	AS	07/11/14 22:39	WI140215-3	2	.68	2.677	mg/L	99.9	90	110			
L19165-04DUP	DUP	07/11/14 22:42			.09	.085	mg/L				5.7	20	RA

SPF Water Engineering

ACZ Project ID: ***L19171***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367260													
WG367260ICV	ICV	07/09/14 12:34	WI131021-1	1.003		1.009	mg/L	100.6	90	110			
WG367260ICB	ICB	07/09/14 12:38				U	mg/L		-0.15	0.15			
WG367260LFB1	LFB	07/09/14 12:39	WI140113-8	1		1.004	mg/L	100.4	90	110			
WG367260LFB2	LFB	07/09/14 13:47	WI140113-8	1		1.007	mg/L	100.7	90	110			
L19171-01AS	AS	07/09/14 13:49	WI140113-8	1	U	1.069	mg/L	106.9	90	110			
L19171-02DUP	DUP	07/09/14 13:51			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024LCSW1	LCSW	07/03/14 12:33	PCN45265	5.99		6.03	units	100.7	5.89	6.09			
WG367024LCSW4	LCSW	07/03/14 15:19	PCN45265	5.99		6.08	units	101.5	5.89	6.09			
WG367024LCSW7	LCSW	07/03/14 18:00	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
L19169-03DUP	DUP	07/03/14 21:34			8	8.05	units				0.6	20	
WG367024LCSW10	LCSW	07/03/14 21:37	PCN45265	5.99		6.03	units	100.7	5.89	6.09			
WG367024LCSW13	LCSW	07/04/14 1:27	PCN45265	5.99		6.03	units	100.7	5.89	6.09			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367250													
WG367250ICV	ICV	07/09/14 11:10	WI140620-3	.65228		.685	mg/L	105	90	110			
WG367250ICB	ICB	07/09/14 11:12				U	mg/L		-0.03	0.03			
WG367252													
WG367169LRB	LRB	07/09/14 12:02				U	mg/L		-0.03	0.03			
WG367169LFB	LFB	07/09/14 12:04	WI140701-2	.5		.484	mg/L	96.8	90	110			
L19134-03LFM	LFM	07/09/14 12:06	WI140701-2	.5	U	.503	mg/L	100.6	90	110			
L19134-05DUP	DUP	07/09/14 12:08			U	U	mg/L				0	20	RA
L19171-02LFM	LFM	07/09/14 12:22	WI140701-2	.5	.03	.519	mg/L	97.8	90	110			
L19171-03DUP	DUP	07/09/14 12:40			.68	.723	mg/L				6.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	20		19.94	mg/L	99.7	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.6	0.6			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	99.99364		98.31	mg/L	98.3	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	99.99364	2.6	104.1	mg/L	101.5	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	99.99364	2.6	103.7	mg/L	101.1	85	115	0.38	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	20		19.88	mg/L	99.4	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	99.99364		100.8	mg/L	100.8	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	99.99364	2.8	84.12	mg/L	81.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	99.99364	2.8	83.4	mg/L	80.6	70	130	0.86	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366922													
WG366922PBW	PBW	07/02/14 9:35				U	mg/L		-20	20			
WG366922LCSW	LCSW	07/02/14 9:36	PCN46081	260		254	mg/L	97.7	80	120			
L19174-05DUP	DUP	07/02/14 9:58			160	158	mg/L				1.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366918													
WG366918PBW	PBW	07/02/14 8:30				U	mg/L		-15	15			
WG366918LCSW	LCSW	07/02/14 8:32	PCN46081	160		154	mg/L	96.3	80	120			
L19174-02DUP	DUP	07/02/14 8:56			6	U	mg/L				200	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.06	mg/L	103	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.3	0.3			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1.0009		1.02	mg/L	101.9	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1.0009	U	1.02	mg/L	101.9	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1.0009	U	1.02	mg/L	101.9	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2	mg/L	100	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0009	U	.85	mg/L	84.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0009	U	.85	mg/L	84.9	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05135	mg/L	102.7	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09194	mg/L	91.9	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.1013	mg/L	101.3	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09332	mg/L	93.3	70	130	8.2	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05089	mg/L	101.8	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.05165	mg/L	103.2	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0001	.05019	mg/L	100.1	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0001	.05082	mg/L	101.3	70	130	1.25	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.02002		.02057	mg/L	102.7	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.02		.0172	mg/L	86	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.02	U	.01563	mg/L	78.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.02	U	.01769	mg/L	88.5	70	130	12.36	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.02002		.02033	mg/L	101.5	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.01002		.009656	mg/L	96.4	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.01002	U	.009004	mg/L	89.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.01002	U	.009184	mg/L	91.7	70	130	1.98	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	100		99.69	mg/L	99.7	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.6	0.6			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	100.0393		98.77	mg/L	98.7	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	100.0393	3.8	105.9	mg/L	102.1	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	100.0393	3.8	105.5	mg/L	101.7	85	115	0.38	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		99.65	mg/L	99.7	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	100.0393		100.8	mg/L	100.8	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	100.0393	32.7	114.16	mg/L	81.4	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	100.0393	32.7	113.08	mg/L	80.3	70	130	0.95	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.023	mg/L	101.2	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.015	0.015			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	.5005		.5049	mg/L	100.9	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	.5005	1.47	1.922	mg/L	90.3	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	.5005	1.47	1.918	mg/L	89.5	85	115	0.21	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9762	mg/L	98.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.015	0.015			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.011	0.011			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.5016	mg/L	100.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	.06	.46	mg/L	79.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	.06	.457	mg/L	79.3	70	130	0.65	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19162-01DUP	DUP	07/10/14 1:48			3.66	3.8	mg/L				3.8	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	30	10.6	42.1	mg/L	105	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.0543	mg/L	108.6	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1002		.09872	mg/L	98.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1002	U	.1006	mg/L	100.4	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1002	U	.1014	mg/L	101.2	70	130	0.79	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05314	mg/L	106.3	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0502		.0487	mg/L	97	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0502	U	.04861	mg/L	96.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0502	U	.05137	mg/L	102.3	70	130	5.52	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.0501		.04918	mg/L	98.2	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09133	mg/L	91.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0002	.09726	mg/L	97.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0002	.09412	mg/L	93.9	70	130	3.28	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.0501		.04929	mg/L	98.4	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04776	mg/L	95.4	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04705	mg/L	94	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04872	mg/L	97.3	70	130	3.49	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		2.0525	mg/L	102.6	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.015	0.015			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	1		1	mg/L	100	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	1	U	1.007	mg/L	100.7	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	1	U	1.003	mg/L	100.3	85	115	0.4	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9945	mg/L	99.7	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.015	0.015			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.011	0.011			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1		1.015	mg/L	101.5	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1	.04	.851	mg/L	81.1	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1	.04	.834	mg/L	79.4	70	130	2.02	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05122	mg/L	102.4	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09431	mg/L	94.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.1001	mg/L	100.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.1004	mg/L	100.4	70	130	0.3	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05262	mg/L	105.2	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04801	mg/L	95.9	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04986	mg/L	99.6	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.05228	mg/L	104.5	70	130	4.74	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04996	mg/L	99.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0006	0.0006			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09673	mg/L	96.7	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09528	mg/L	95.3	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09244	mg/L	92.4	70	130	3.03	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04955	mg/L	99.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0006	0.0006			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00044	0.00044			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.05005	mg/L	100	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0011	.05015	mg/L	98	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0011	.05175	mg/L	101.2	70	130	3.14	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366948													
WG366948ICV	ICV	07/02/14 16:38	II140701-2	2		1.964	mg/L	98.2	95	105			
WG366948ICB	ICB	07/02/14 16:44				U	mg/L		-0.03	0.03			
WG366948LFB	LFB	07/02/14 16:56	II140611-2	.5005		.51	mg/L	101.9	85	115			
L19164-12AS	AS	07/02/14 17:46	II140611-2	.5005	.52	.958	mg/L	91.5	85	115			
L19164-12ASD	ASD	07/02/14 17:49	II140611-2	.5005	.52	.957	mg/L	91.3	85	115	0.1	20	

SPF Water Engineering

ACZ Project ID: ***L19171***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.995	mg/L	99.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.03	0.03			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.022	0.022			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.527	mg/L	105.3	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	3.27	3.548	mg/L	55.5	70	130			M3
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	3.27	3.534	mg/L	52.7	70	130	0.4	20	M3

SPF Water Engineering ACZ Project ID: ***L19171***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19171-01	WG367065	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367228	Mercury, total	M1631, Atomic Fluorescence	DF	Sample required dilution due to high sediment.
	WG367398	Selenium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG367065	Zinc, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367265	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367260	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367252	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366918	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L19171***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19171-02	WG367065	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367383	Manganese, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG367065	Zinc, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367265	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367260	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366918	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L19171***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19171-03	WG367065	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367383	Beryllium, total	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG367065	Zinc, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367265	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367491	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367260	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366918	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367024	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L19171-04	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L19171***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19171-05	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19171
Date Received: 07/01/2014 09:56
Received By: mtb
Date Printed: 7/1/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19932	3.6	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L19171

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 2nd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	per ACZ Spec						
GW-4	6/27/14 9:11	GW	8	X							
59761	6/27/14 10:46	GW	8	X							
BLM	6/27/14 12:01	GW	8	X							
cyanide blank	NA	NA	1		X						
cyanide blank	NA	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	6-30-14 8:00	[signature]	7-1-14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19171 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 18, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19172

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 01, 2014. This project has been assigned to ACZ's project number, L19172. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L19172. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 17, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

July 18, 2014

Project ID: Calico 2nd Quarter 2
ACZ Project ID: L19172

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on July 1, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L19172. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L19172. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L19172-01***
Date Sampled: *06/27/14 14:35*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:09	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/14 9:54	las
Total Hot Plate Digestion	M200.2 ICP								07/03/14 13:32	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L19172-01***
Date Sampled: *06/27/14 14:35*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/14 21:30	aeb
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/07/14 13:33	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	07/17/14 10:21	pmc
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	07/10/14 22:00	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0578			mg/L	0.0002	0.001	07/17/14 10:21	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0624			mg/L	0.0002	0.001	07/10/14 22:00	msh
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	07/02/14 21:30	aeb
Barium, total	M200.7 ICP	1	0.022			mg/L	0.003	0.02	07/07/14 13:33	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:21	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 22:00	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 21:30	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 13:33	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	07/02/14 21:30	aeb
Boron, total	M200.7 ICP	1	0.16			mg/L	0.01	0.05	07/07/14 13:33	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:21	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 22:00	msh
Calcium, dissolved	M200.7 ICP	1	53.5			mg/L	0.1	0.5	07/02/14 21:30	aeb
Calcium, total	M200.7 ICP	1	55.2			mg/L	0.1	0.5	07/07/14 13:33	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/17/14 10:21	pmc
Chromium, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0005	0.002	07/10/14 22:00	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00024	B		mg/L	0.00005	0.0003	07/17/14 10:21	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00023	B		mg/L	0.00005	0.0003	07/10/14 22:00	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/17/14 10:21	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 22:00	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 21:30	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:33	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/14 21:30	aeb
Iron, total	M200.7 ICP	1	0.09			mg/L	0.02	0.05	07/07/14 13:33	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:21	pmc
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	07/10/14 22:00	msh
Lithium, dissolved	M200.7 ICP	1	0.196			mg/L	0.008	0.04	07/02/14 21:30	aeb
Lithium, total	M200.7 ICP	1	0.195			mg/L	0.008	0.04	07/07/14 13:33	aeb
Magnesium, dissolved	M200.7 ICP	1	5.8			mg/L	0.2	1	07/02/14 21:30	aeb
Magnesium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	07/07/14 13:33	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0856			mg/L	0.0005	0.003	07/17/14 10:21	pmc
Manganese, total	M200.8 ICP-MS	1	0.1007		*	mg/L	0.0005	0.003	07/10/14 22:00	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	07/10/14 15:10	las
Mercury, total	M1631, Atomic Fluorescence	1	1.8			ng/L	0.2	0.5	07/09/14 13:01	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	07/17/14 10:21	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0107			mg/L	0.0005	0.003	07/10/14 22:00	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/17/14 10:21	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/14 22:00	msh
Potassium, dissolved	M200.7 ICP	1	26.2			mg/L	0.2	1	07/02/14 21:30	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L19172-01***
Date Sampled: *06/27/14 14:35*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	26.6			mg/L	0.2	1	07/07/14 13:33	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 21:30	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:33	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/17/14 10:21	pmc
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	07/10/14 22:00	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:21	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 22:00	msh
Sodium, dissolved	M200.7 ICP	1	298			mg/L	0.2	1	07/02/14 21:30	aeb
Sodium, total	M200.7 ICP	1	297			mg/L	0.2	1	07/07/14 13:33	aeb
Strontium, dissolved	M200.7 ICP	1	0.172			mg/L	0.005	0.03	07/02/14 21:30	aeb
Strontium, total	M200.7 ICP	1	0.169			mg/L	0.005	0.03	07/07/14 13:33	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:21	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 22:00	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/17/14 10:21	pmc
Tin, total	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/10/14 22:00	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/14 21:30	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 13:33	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	07/17/14 10:21	pmc
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	07/10/14 22:00	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0002	0.001	07/17/14 10:21	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0002	0.001	07/10/14 22:00	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/14 21:30	aeb
Zinc, total	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/07/14 13:33	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L19172-01***
Date Sampled: *06/27/14 14:35*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	162			mg/L	2	20	07/03/14 0:00	abd
Carbonate as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Total Alkalinity		1	162			mg/L	2	20	07/03/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	10	19.9	B	*	mg/L	5	25	07/10/14 4:47	jlf
Conductivity @25C	SM2510B	1	1710			umhos/cm	1	10	07/03/14 23:19	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:22	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:49	pjb
Fluoride	M300.0 - Ion Chromatography	10	0.67	B	*	mg/L	0.5	2.5	07/10/14 4:47	jlf
Hardness as CaCO3	SM2340B - Calculation		157			mg/L	0.8	4	07/18/14 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	07/09/14 23:50	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	07/09/14 13:55	mpb
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	07/03/14 0:00	abd
pH measured at		1	23			C	0.1	0.1	07/03/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05			mg/L	0.01	0.05	07/09/14 12:25	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	1130			mg/L	10	20	07/02/14 9:52	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/02/14 8:49	nml
Sulfate	M300.0 - Ion Chromatography	10	612		*	mg/L	5	25	07/10/14 4:47	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L19172-02***
Date Sampled: *06/27/14 17:30*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								07/09/14 14:02	tcd
Cyanide, WAD	SM4500-CN I- distillation								07/09/14 12:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/08/14 13:16	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								07/10/14 10:04	las
Total Hot Plate Digestion	M200.2 ICP								07/03/14 13:54	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L19172-02***
Date Sampled: *06/27/14 17:30*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	07/02/14 21:39	aeb
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/07/14 13:36	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/17/14 10:31	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	07/10/14 22:04	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0042			mg/L	0.0002	0.001	07/17/14 10:31	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0050			mg/L	0.0002	0.001	07/10/14 22:04	msh
Barium, dissolved	M200.7 ICP	1	0.014	B		mg/L	0.003	0.02	07/02/14 21:39	aeb
Barium, total	M200.7 ICP	1	0.012	B		mg/L	0.003	0.02	07/07/14 13:36	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:31	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 22:04	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/02/14 21:39	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/07/14 13:36	aeb
Boron, dissolved	M200.7 ICP	1	0.22			mg/L	0.01	0.05	07/02/14 21:39	aeb
Boron, total	M200.7 ICP	1	0.21			mg/L	0.01	0.05	07/07/14 13:36	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:31	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 22:04	msh
Calcium, dissolved	M200.7 ICP	1	3			mg/L	0.1	0.5	07/02/14 21:39	aeb
Calcium, total	M200.7 ICP	1	3.2			mg/L	0.1	0.5	07/07/14 13:36	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/17/14 10:31	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	07/10/14 22:04	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	07/17/14 10:31	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	07/10/14 22:04	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/17/14 10:31	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	07/10/14 22:04	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 21:39	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:36	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/02/14 21:39	aeb
Iron, total	M200.7 ICP	1	0.05			mg/L	0.02	0.05	07/07/14 13:36	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	07/17/14 10:31	pmc
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/10/14 22:04	msh
Lithium, dissolved	M200.7 ICP	1	0.020	B		mg/L	0.008	0.04	07/02/14 21:39	aeb
Lithium, total	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	07/07/14 13:36	aeb
Magnesium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	07/02/14 21:39	aeb
Magnesium, total	M200.7 ICP	1	0.7	B		mg/L	0.2	1	07/07/14 13:36	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0078			mg/L	0.0005	0.003	07/17/14 10:31	pmc
Manganese, total	M200.8 ICP-MS	1	0.0098			mg/L	0.0005	0.003	07/11/14 21:59	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	07/10/14 15:15	las
Mercury, total	M1631, Atomic Fluorescence	1	0.4	B		ng/L	0.2	0.5	07/09/14 13:06	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0080			mg/L	0.0005	0.003	07/17/14 10:31	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0086			mg/L	0.0005	0.003	07/10/14 22:04	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/17/14 10:31	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	07/10/14 22:04	msh
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.2	1	07/02/14 21:39	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L19172-02***
Date Sampled: *06/27/14 17:30*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.1			mg/L	0.2	1	07/07/14 13:36	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/02/14 21:39	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/07/14 13:36	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0003	07/17/14 10:31	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	07/10/14 22:04	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/17/14 10:31	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	07/10/14 22:04	msh
Sodium, dissolved	M200.7 ICP	1	81.7			mg/L	0.2	1	07/02/14 21:39	aeb
Sodium, total	M200.7 ICP	1	82.5			mg/L	0.2	1	07/07/14 13:36	aeb
Strontium, dissolved	M200.7 ICP	1	0.026	B		mg/L	0.005	0.03	07/02/14 21:39	aeb
Strontium, total	M200.7 ICP	1	0.023	B		mg/L	0.005	0.03	07/07/14 13:36	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/17/14 10:31	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	07/10/14 22:04	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/17/14 10:31	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/10/14 22:04	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/02/14 21:39	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	07/07/14 13:36	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/17/14 10:31	pmc
Uranium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	07/10/14 22:04	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0011			mg/L	0.0002	0.001	07/17/14 10:31	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0016			mg/L	0.0002	0.001	07/10/14 22:04	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/02/14 21:39	aeb
Zinc, total	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/07/14 13:36	aeb

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L19172-02***
Date Sampled: *06/27/14 17:30*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	127			mg/L	2	20	07/03/14 0:00	abd
Carbonate as CaCO3		1	7	B		mg/L	2	20	07/03/14 0:00	abd
Hydroxide as CaCO3		1		U		mg/L	2	20	07/03/14 0:00	abd
Total Alkalinity		1	134			mg/L	2	20	07/03/14 0:00	abd
Chloride	M300.0 - Ion Chromatography	1	7.06		*	mg/L	0.5	2.5	07/10/14 5:05	jlf
Conductivity @25C	SM2510B	1	383			umhos/cm	1	10	07/03/14 23:28	abd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 23:25	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/09/14 22:51	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.71		*	mg/L	0.05	0.25	07/10/14 5:05	jlf
Hardness as CaCO3	SM2340B - Calculation		10			mg/L	0.8	4	07/18/14 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.07	B		mg/L	0.02	0.1	07/09/14 23:51	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.07	B	*	mg/L	0.05	0.2	07/09/14 13:56	mpb
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	07/03/14 0:00	abd
pH measured at		1	23			C	0.1	0.1	07/03/14 0:00	abd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.14			mg/L	0.01	0.05	07/09/14 12:26	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	250			mg/L	10	20	07/02/14 9:54	nml
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	07/02/14 8:51	nml
Sulfate	M300.0 - Ion Chromatography	1	21.7		*	mg/L	0.5	2.5	07/10/14 5:05	jlf

SPF Water Engineering
Project ID: Calico 2nd Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L19172-03***
Date Sampled: *06/27/14 00:00*
Date Received: *07/01/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	07/09/14 13:11	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L19172***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024PBW1	PBW	07/03/14 12:30				U	mg/L		-20	20			
WG367024LCSW3	LCSW	07/03/14 12:49	WC140630-	820.0001		819.1	mg/L	99.9	90	110			
WG367024LCSW6	LCSW	07/03/14 15:34	WC140630-	820.0001		811.8	mg/L	99	90	110			
WG367024PBW2	PBW	07/03/14 15:43				U	mg/L		-20	20			
WG367024LCSW9	LCSW	07/03/14 18:16	WC140630-	820.0001		825.9	mg/L	100.7	90	110			
WG367024PBW3	PBW	07/03/14 18:25				U	mg/L		-20	20			
L19169-03DUP	DUP	07/03/14 21:34			37	37.5	mg/L				1.3	20	
WG367024LCSW12	LCSW	07/03/14 21:53	WC140630-	820.0001		828.6	mg/L	101	90	110			
WG367024PBW4	PBW	07/03/14 22:02				U	mg/L		-20	20			
L19172-02DUP	DUP	07/03/14 23:47			134	134.1	mg/L				0.1	20	
WG367024LCSW15	LCSW	07/04/14 1:43	WC140630-	820.0001		832	mg/L	101.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.032	mg/L	101.6	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.09	0.09			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1.0011		1.064	mg/L	106.3	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1.0011	U	1.114	mg/L	111.3	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1.0011	U	1.098	mg/L	109.7	85	115	1.45	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.976	mg/L	98.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.09	0.09			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.066	0.066			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0011		1.042	mg/L	104.1	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0011	65.1	64.74	mg/L	-36	70	130			M3
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0011	65.1	63.98	mg/L	-111.9	70	130	1.18	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.02002		.01984	mg/L	99.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0012	0.0012			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.02		.01876	mg/L	93.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.02	U	.01864	mg/L	93.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.02	U	.01894	mg/L	94.7	70	130	1.6	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	.2	U	.1823	mg/L	91.2	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	.2	U	.1817	mg/L	90.9	70	130	0.33	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.02002		.01961	mg/L	98	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0012	0.0012			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00088	0.00088			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.01		.01013	mg/L	101.3	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.01	U	.00994	mg/L	99.4	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.01	U	.01022	mg/L	102.2	70	130	2.78	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05342	mg/L	106.8	90	110			
WG367398ICB	ICB	07/17/14 9:51				.00032	mg/L		-0.0006	0.0006			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09414	mg/L	94.1	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0109	.1074	mg/L	96.5	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0109	.1026	mg/L	91.7	70	130	4.57	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9704	mg/L	97	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.909	mg/L	90.9	70	130	6.53	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05047	mg/L	100.9	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0006	0.0006			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00044	0.00044			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.052	mg/L	103.8	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	.0002	.04896	mg/L	97.3	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	.0002	.05178	mg/L	103	70	130	5.6	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		1.9835	mg/L	99.2	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.009	0.009			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	.5		.4945	mg/L	98.9	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	.5	.024	.5219	mg/L	99.6	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	.5	.024	.5185	mg/L	98.9	85	115	0.65	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9568	mg/L	97.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.009	0.009			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.0066	0.0066			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5		.4934	mg/L	98.7	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5	.012	.413	mg/L	80.2	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5	.012	.4108	mg/L	79.8	70	130	0.53	20	

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ACZ Project ID: ***L19172***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.0512	mg/L	102.4	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09058	mg/L	90.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.00005	.09272	mg/L	92.6	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.00005	.09042	mg/L	90.3	70	130	2.51	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.001	U	.9694	mg/L	96.8	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.001	U	.9237	mg/L	92.3	70	130	4.83	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04719	mg/L	94.4	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04679	mg/L	93.5	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04342	mg/L	86.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04545	mg/L	90.8	70	130	4.57	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		1.997	mg/L	99.9	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.12	0.12			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	.999		.975	mg/L	97.6	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	.999	U	1.025	mg/L	102.6	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	.999	U	1.016	mg/L	101.7	85	115	0.88	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.026	mg/L	101.3	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.12	0.12			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.088	0.088			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.999		1.042	mg/L	104.3	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.999	U	.822	mg/L	82.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.999	U	.831	mg/L	83.2	70	130	1.09	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.019	mg/L	101	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.03	0.03			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	.5005		.503	mg/L	100.5	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	.5005	.17	.667	mg/L	99.3	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	.5005	.17	.67	mg/L	99.9	85	115	0.45	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.025	mg/L	101.3	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.03	0.03			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.022	0.022			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.504	mg/L	100.7	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	U	.412	mg/L	82.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	U	.428	mg/L	85.5	70	130	3.81	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05073	mg/L	101.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09124	mg/L	91.2	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09392	mg/L	93.9	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09334	mg/L	93.3	70	130	0.62	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9283	mg/L	92.8	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.8941	mg/L	89.4	70	130	3.75	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04981	mg/L	99.6	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				.00012	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.04905	mg/L	97.9	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	U	.04647	mg/L	92.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	U	.0483	mg/L	96.4	70	130	3.86	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	100		100.29	mg/L	100.3	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.3	0.3			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	67.98099		71.74	mg/L	105.5	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	67.98099	53.5	125.3	mg/L	105.6	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	67.98099	53.5	123.6	mg/L	103.1	85	115	1.37	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		101	mg/L	101	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	67.98099		73.57	mg/L	108.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	67.98099	55	112.06	mg/L	83.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	67.98099	55	111.08	mg/L	82.5	70	130	0.88	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	19.98		20.3	mg/L	101.6	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	30		31.3	mg/L	104.3	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	30		31.5	mg/L	105	90	110			
L19162-01DUP	DUP	07/10/14 1:48			2.11	2.16	mg/L				2.3	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	30	2.31	34	mg/L	105.6	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04995	mg/L	99.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09293	mg/L	92.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	U	.08991	mg/L	89.8	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	U	.08666	mg/L	86.6	70	130	3.68	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.001	U	.9352	mg/L	93.4	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.001	U	.8853	mg/L	88.4	70	130	5.48	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04864	mg/L	97.3	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04743	mg/L	94.8	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0009	.04611	mg/L	90.3	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0009	.04759	mg/L	93.3	70	130	3.16	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05025	mg/L	100.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09743	mg/L	97.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.00038	.09815	mg/L	97.7	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.00038	.09805	mg/L	97.6	70	130	0.1	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.001	U	.9512	mg/L	95	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.001	U	.9406	mg/L	94	70	130	1.12	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05003	mg/L	100.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04961	mg/L	99.1	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.00047	.04846	mg/L	95.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.00047	.04984	mg/L	98.6	70	130	2.81	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024LCSW2	LCSW	07/03/14 12:35	PCN44568	1408.8		1447.6	umhos/cm	102.8	90	110			
WG367024LCSW5	LCSW	07/03/14 15:21	PCN44568	1408.8		1423.2	umhos/cm	101	90	110			
WG367024LCSW8	LCSW	07/03/14 18:02	PCN44568	1408.8		1409.9	umhos/cm	100.1	90	110			
L19169-03DUP	DUP	07/03/14 21:34			178	180.4	umhos/cm				1.3	20	
WG367024LCSW11	LCSW	07/03/14 21:39	PCN44568	1408.8		1401.8	umhos/cm	99.5	90	110			
L19172-02DUP	DUP	07/03/14 23:47			383	381	umhos/cm				0.5	20	
WG367024LCSW14	LCSW	07/04/14 1:29	PCN44568	1408.8		1389.6	umhos/cm	98.6	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04874	mg/L	97.5	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.08796	mg/L	88	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.08391	mg/L	83.9	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.08084	mg/L	80.8	70	130	3.73	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.881	mg/L	88.1	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.8323	mg/L	83.2	70	130	5.68	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.0481	mg/L	96.2	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05		.04651	mg/L	93	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05	U	.04257	mg/L	85.1	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05	U	.04442	mg/L	88.8	70	130	4.25	20	

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ACZ Project ID: ***L19172***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367312													
WG367312ICV	ICV	07/09/14 22:03	WI140702-5	.3		.2939	mg/L	98	90	110			
WG367312ICB	ICB	07/09/14 22:04				U	mg/L		-0.003	0.003			
WG367316													
WG367276LRB	LRB	07/09/14 23:15				U	mg/L		-0.003	0.003			
WG367276LFB	LFB	07/09/14 23:15	WI140702-2	.2		.1909	mg/L	95.5	90	110			
L19171-01DUP	DUP	07/09/14 23:17			U	U	mg/L				0	20	RA
L19171-02LFM	LFM	07/09/14 23:19	WI140702-2	.2	U	.1693	mg/L	84.7	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367312													
WG367312ICV	ICV	07/09/14 22:03	WI140702-5	.3		.2939	mg/L	98	90	110			
WG367312ICB	ICB	07/09/14 22:04				U	mg/L		-0.003	0.003			
WG367313													
WG367258LRB	LRB	07/09/14 22:41				U	mg/L		-0.003	0.003			
WG367258LFB	LFB	07/09/14 22:42	WI140702-4	.2		.1822	mg/L	91.1	90	110			
L19171-01DUP	DUP	07/09/14 22:43			U	U	mg/L				0	20	RA
L19171-02LFM	LFM	07/09/14 22:45	WI140702-4	.2	U	.1736	mg/L	86.8	90	110			M2

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	4.02		4.17	mg/L	103.7	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-0.3	0.3			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	1.5		1.58	mg/L	105.3	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	1.5		1.58	mg/L	105.3	90	110			
L19162-01DUP	DUP	07/10/14 1:48			.28	.29	mg/L				3.5	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	1.5	U	1.71	mg/L	114	90	110			M1

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.04	mg/L	102	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.3	0.3			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1.001		1	mg/L	99.9	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1.001	U	1.05	mg/L	104.9	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1.001	U	1.03	mg/L	102.9	85	115	1.92	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2.01	mg/L	100.5	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.001		1.02	mg/L	101.9	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.001	U	.74	mg/L	73.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.001	U	.77	mg/L	76.9	70	130	3.97	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		1.986	mg/L	99.3	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.06	0.06			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1.0014		1.001	mg/L	100	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1.0014	U	1.024	mg/L	102.3	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1.0014	U	1.018	mg/L	101.7	85	115	0.59	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.97	mg/L	98.5	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.06	0.06			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.044	0.044			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0014		1.007	mg/L	100.6	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0014	1.16	1.939	mg/L	78.8	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0014	1.16	1.921	mg/L	77	70	130	0.93	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04988	mg/L	99.8	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09399	mg/L	94	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09645	mg/L	96.5	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09622	mg/L	96.2	70	130	0.24	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9572	mg/L	95.7	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.9152	mg/L	91.5	70	130	4.49	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05053	mg/L	101.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04763	mg/L	95.2	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04796	mg/L	95.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04952	mg/L	98.9	70	130	3.2	20	

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ACZ Project ID: ***L19172***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.0058	mg/L	100.3	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.024	0.024			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1.002		.9763	mg/L	97.4	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1.002	.196	1.179	mg/L	98.1	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1.002	.196	1.171	mg/L	97.3	85	115	0.68	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.987	mg/L	99.4	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.024	0.024			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.0176	0.0176			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.002		.9928	mg/L	99.1	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.002	.03	.841	mg/L	80.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.002	.03	.836	mg/L	80.4	70	130	0.6	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	100		97.46	mg/L	97.5	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.6	0.6			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	50.00131		48.91	mg/L	97.8	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	50.00131	5.8	55.92	mg/L	100.2	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	50.00131	5.8	55.14	mg/L	98.7	85	115	1.4	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		98.08	mg/L	98.1	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	50.00131		50.11	mg/L	100.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	50.00131	123	160.78	mg/L	75.6	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	50.00131	123	159.08	mg/L	72.2	70	130	1.06	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05247	mg/L	104.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1001		.09686	mg/L	96.8	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1001	.0055	.1028	mg/L	97.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1001	.0055	.1027	mg/L	97.1	70	130	0.1	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.001	.032	.9931	mg/L	96	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.001	.032	.973	mg/L	94	70	130	2.04	20	

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ACZ Project ID: ***L19172***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05249	mg/L	105	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				.0012	mg/L		-0.0011	0.0011			B7 BF
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0501		.04923	mg/L	98.3	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0501	.0013	.04934	mg/L	95.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0501	.0013	.05116	mg/L	99.5	70	130	3.62	20	
WG367480													
WG367480ICV	ICV	07/11/14 21:39	MS140513-1	.05		.05023	mg/L	100.5	90	110			
WG367480ICB	ICB	07/11/14 21:42				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/11/14 21:46				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/11/14 21:49	MS140625-3	.0501		.04891	mg/L	97.6	85	115			
L19202-03LFM	LFM	07/11/14 22:06	MS140625-3	.0501	.0015	.05002	mg/L	96.8	70	130			
L19202-03LFMD	LFMD	07/11/14 22:09	MS140625-3	.0501	.0015	.04971	mg/L	96.2	70	130	0.62	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367326													
WG367326ICV	ICV	07/10/14 12:28	HG140624-4	10		10.5	ng/L	105	79	121			
WG367326ICB	ICB	07/10/14 12:33				U	ng/L		-0.5	0.5			
WG367364													
WG367364CCV1	CCV	07/10/14 13:34	HG140624-4	10		10.9	ng/L	109	76.5	123.4			
WG367364CCB1	CCB	07/10/14 13:39				U	ng/L		-0.5	0.5			
WG367364PQV	PQV	07/10/14 13:47	HG140624-6	.5		.5	ng/L	100	70	130			
WG367364LFB	LFB	07/10/14 13:52	HG140624-5	2		2.01	ng/L	100.5	71	125			
WG366767 PBW	PBW	07/10/14 13:57				U	ng/L		-0.5	0.5			
L19087-01MS	MS	07/10/14 14:07	HG140624-5	2	.2	2.35	ng/L	107.5	71	125			
L19087-01MSD	MSD	07/10/14 14:12	HG140624-5	2	.2	2.29	ng/L	104.5	71	125	2.59	24	
WG367364CCV2	CCV	07/10/14 14:37	HG140624-4	10		10.9	ng/L	109	76.5	123.4			
WG367364CCB2	CCB	07/10/14 14:42				U	ng/L		-0.5	0.5			
WG367364CCV3	CCV	07/10/14 15:20	HG140624-4	10		11.2	ng/L	112	76.5	123.4			
WG367364CCB3	CCB	07/10/14 15:25				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L19172***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366407													
WG366407ICV	ICV	06/24/14 15:11	HG140624-4	10		10.2	ng/L	102	79	121			
WG366407ICB	ICB	06/24/14 15:16				U	ng/L		-0.5	0.5			
WG367228													
WG367228CCV1	CCV	07/09/14 11:48	HG140624-4	10		9.01	ng/L	90.1	76.5	123.4			
WG367228CCB1	CCB	07/09/14 11:53				U	ng/L		-0.5	0.5			
WG367228PQV	PQV	07/09/14 11:58	HG140624-6	.5		.43	ng/L	86	70	130			
WG367228LFB	LFB	07/09/14 12:03	HG140624-5	2		1.79	ng/L	89.5	71	125			
L19171-01MS	MS	07/09/14 12:30	HG2XPREP	8	.8	4.34	ng/L	88.5	71	125			
L19171-01MSD	MSD	07/09/14 12:35	HG2XPREP	8	.8	4.38	ng/L	89.5	71	125	0.92	24	
WG367228CCV2	CCV	07/09/14 12:50	HG140624-4	10		9.24	ng/L	92.4	76.5	123.4			
WG367228CCB2	CCB	07/09/14 12:56				U	ng/L		-0.5	0.5			
WG367228CCV3	CCV	07/09/14 13:51	HG140624-4	10		9.24	ng/L	92.4	76.5	123.4			
WG367228CCB3	CCB	07/09/14 13:56				U	ng/L		-0.5	0.5			
WG367228CCV4	CCV	07/09/14 14:27	HG140624-4	10		9.39	ng/L	93.9	76.5	123.4			
WG367228CCB4	CCB	07/09/14 14:32				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.01998		.018	mg/L	90.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0015	0.0015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09064	mg/L	90.6	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0083	.1033	mg/L	95	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0083	.1041	mg/L	95.8	70	130	0.77	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	.008	.9261	mg/L	91.8	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	.008	.8888	mg/L	88.1	70	130	4.11	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.01998		.018	mg/L	90.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0015	0.0015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.0011	0.0011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0502		.04504	mg/L	89.7	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0502	U	.04468	mg/L	89	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0502	U	.04556	mg/L	90.8	70	130	1.95	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05056	mg/L	101.1	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0018	0.0018			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1002		.09173	mg/L	91.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1002	U	.0873	mg/L	87.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1002	U	.08405	mg/L	83.9	70	130	3.79	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.002	U	.9155	mg/L	91.4	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.002	U	.8616	mg/L	86	70	130	6.07	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04992	mg/L	99.8	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0018	0.0018			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00132	0.00132			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05		.04873	mg/L	97.5	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05	U	.0447	mg/L	89.4	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05	U	.04625	mg/L	92.5	70	130	3.41	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367310													
WG367310ICV	ICV	07/09/14 22:10	WI140417-3	2.416		2.326	mg/L	96.3	90	110			
WG367310ICB	ICB	07/09/14 22:11				U	mg/L		-0.06	0.06			
WG367315													
WG367315LFB	LFB	07/09/14 23:43	WI140215-3	2		2.072	mg/L	103.6	90	110			
L19171-01AS	AS	07/09/14 23:45	WI140215-3	2	U	1.944	mg/L	97.2	90	110			
L19171-02DUP	DUP	07/09/14 23:48			1.73	1.741	mg/L				0.6	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367260													
WG367260ICV	ICV	07/09/14 12:34	WI131021-1	1.003		1.009	mg/L	100.6	90	110			
WG367260ICB	ICB	07/09/14 12:38				U	mg/L		-0.15	0.15			
WG367260LFB1	LFB	07/09/14 12:39	WI140113-8	1		1.004	mg/L	100.4	90	110			
WG367260LFB2	LFB	07/09/14 13:47	WI140113-8	1		1.007	mg/L	100.7	90	110			
L19171-01AS	AS	07/09/14 13:49	WI140113-8	1	U	1.069	mg/L	106.9	90	110			
L19171-02DUP	DUP	07/09/14 13:51			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367024													
WG367024LCSW1	LCSW	07/03/14 12:33	PCN45265	5.99		6.03	units	100.7	5.89	6.09			
WG367024LCSW4	LCSW	07/03/14 15:19	PCN45265	5.99		6.08	units	101.5	5.89	6.09			
WG367024LCSW7	LCSW	07/03/14 18:00	PCN45265	5.99		6.07	units	101.3	5.89	6.09			
L19169-03DUP	DUP	07/03/14 21:34			8	8.05	units				0.6	20	
WG367024LCSW10	LCSW	07/03/14 21:37	PCN45265	5.99		6.03	units	100.7	5.89	6.09			
L19172-02DUP	DUP	07/03/14 23:47			8.5	8.51	units				0.1	20	
WG367024LCSW13	LCSW	07/04/14 1:27	PCN45265	5.99		6.03	units	100.7	5.89	6.09			

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ACZ Project ID: ***L19172***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367250													
WG367250ICV	ICV	07/09/14 11:10	WI140620-3	.65228		.685	mg/L	105	90	110			
WG367250ICB	ICB	07/09/14 11:12				U	mg/L		-0.03	0.03			
WG367252													
WG367169LRB	LRB	07/09/14 12:02				U	mg/L		-0.03	0.03			
WG367169LFB	LFB	07/09/14 12:04	WI140701-2	.5		.484	mg/L	96.8	90	110			
L19171-02LFM	LFM	07/09/14 12:22	WI140701-2	.5	.03	.519	mg/L	97.8	90	110			
L19171-03DUP	DUP	07/09/14 12:40			.68	.723	mg/L				6.1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	20		19.82	mg/L	99.1	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.6	0.6			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	99.99364		99.45	mg/L	99.5	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	99.99364	26.2	127.3	mg/L	101.1	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	99.99364	26.2	126.2	mg/L	100	85	115	0.87	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	20		19.88	mg/L	99.4	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	99.99364		100.8	mg/L	100.8	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	99.99364	2.8	84.12	mg/L	81.3	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	99.99364	2.8	83.4	mg/L	80.6	70	130	0.86	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366922													
WG366922PBW	PBW	07/02/14 9:35				U	mg/L		-20	20			
WG366922LCSW	LCSW	07/02/14 9:36	PCN46081	260		254	mg/L	97.7	80	120			
L19174-05DUP	DUP	07/02/14 9:58			160	158	mg/L				1.3	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366918													
WG366918PBW	PBW	07/02/14 8:30				U	mg/L		-15	15			
WG366918LCSW	LCSW	07/02/14 8:32	PCN46081	160		154	mg/L	96.3	80	120			
L19174-02DUP	DUP	07/02/14 8:56			6	U	mg/L				200	10	RA

SPF Water Engineering

ACZ Project ID: ***L19172***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.03	mg/L	101.5	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.3	0.3			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1.0009		1.02	mg/L	101.9	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1.0009	U	1.04	mg/L	103.9	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1.0009	U	1.03	mg/L	102.9	85	115	0.97	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		2	mg/L	100	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.3	0.3			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.22	0.22			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1.0009		1.05	mg/L	104.9	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1.0009	U	.85	mg/L	84.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1.0009	U	.85	mg/L	84.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05135	mg/L	102.7	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09194	mg/L	91.9	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.1013	mg/L	101.3	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09332	mg/L	93.3	70	130	8.2	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9382	mg/L	93.8	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.8904	mg/L	89	70	130	5.23	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05089	mg/L	101.8	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.05165	mg/L	103.2	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0001	.05019	mg/L	100.1	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0001	.05082	mg/L	101.3	70	130	1.25	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.02002		.02057	mg/L	102.7	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.00015	0.00015			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.02		.0172	mg/L	86	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.02	U	.01563	mg/L	78.2	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.02	U	.01769	mg/L	88.5	70	130	12.36	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	.2	U	.1748	mg/L	87.4	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	.2	U	.1784	mg/L	89.2	70	130	2.04	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.02002		.02033	mg/L	101.5	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.00015	0.00015			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00011	0.00011			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.01002		.009656	mg/L	96.4	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.01002	U	.009004	mg/L	89.9	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.01002	U	.009184	mg/L	91.7	70	130	1.98	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	100		98.78	mg/L	98.8	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.6	0.6			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	100.0393		99.67	mg/L	99.6	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	100.0393	298	391.3	mg/L	93.3	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	100.0393	298	385.3	mg/L	87.3	85	115	1.55	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	100		99.65	mg/L	99.7	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.6	0.6			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.44	0.44			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	100.0393		100.8	mg/L	100.8	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	100.0393	32.7	114.16	mg/L	81.4	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	100.0393	32.7	113.08	mg/L	80.3	70	130	0.95	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		1.9885	mg/L	99.4	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.015	0.015			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	.5005		.5058	mg/L	101.1	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	.5005	.172	.6797	mg/L	101.4	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	.5005	.172	.6718	mg/L	99.9	85	115	1.17	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9762	mg/L	98.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.015	0.015			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.011	0.011			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.5016	mg/L	100.2	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	.06	.46	mg/L	79.9	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	.06	.457	mg/L	79.3	70	130	0.65	20	

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ACZ Project ID: ***L19172***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG360290													
WG360290ICV	ICV	03/06/14 13:49	WI140226-1	49.95		51.2	mg/L	102.5	90	110			
WG360290ICB	ICB	03/06/14 14:07				U	mg/L		-1.5	1.5			
WG367265													
WG367265LFB1	LFB	07/09/14 16:15	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG367265LFB2	LFB	07/10/14 0:54	WI140610-6	30		31.1	mg/L	103.7	90	110			
L19162-01DUP	DUP	07/10/14 1:48			3.66	3.8	mg/L				3.8	20	RA
L19162-02AS	AS	07/10/14 3:00	WI140610-6	30	10.6	42.1	mg/L	105	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.0543	mg/L	108.6	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1002		.09872	mg/L	98.5	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1002	U	.1006	mg/L	100.4	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1002	U	.1014	mg/L	101.2	70	130	0.79	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1.002	U	.9973	mg/L	99.5	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1.002	U	.9523	mg/L	95	70	130	4.62	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05314	mg/L	106.3	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.0502		.0487	mg/L	97	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.0502	U	.04861	mg/L	96.8	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.0502	U	.05137	mg/L	102.3	70	130	5.52	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.0501		.04918	mg/L	98.2	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09133	mg/L	91.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	.0002	.09726	mg/L	97.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	.0002	.09412	mg/L	93.9	70	130	3.28	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9621	mg/L	96.2	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.9231	mg/L	92.3	70	130	4.14	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.0501		.04929	mg/L	98.4	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04776	mg/L	95.4	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04705	mg/L	94	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.04872	mg/L	97.3	70	130	3.49	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		2.0155	mg/L	100.8	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.015	0.015			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	1		.9987	mg/L	99.9	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	1	U	1.024	mg/L	102.4	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	1	U	1.009	mg/L	100.9	85	115	1.48	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.9945	mg/L	99.7	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.015	0.015			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.011	0.011			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	1		1.015	mg/L	101.5	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	1	.04	.851	mg/L	81.1	70	130			
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	1	.04	.834	mg/L	79.4	70	130	2.02	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.05122	mg/L	102.4	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0003	0.0003			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09431	mg/L	94.3	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.1001	mg/L	100.1	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.1004	mg/L	100.4	70	130	0.3	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	.033	1.024	mg/L	99.1	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	.033	.9846	mg/L	95.2	70	130	3.92	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.05262	mg/L	105.2	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0003	0.0003			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00022	0.00022			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.04801	mg/L	95.9	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	U	.04986	mg/L	99.6	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	U	.05228	mg/L	104.5	70	130	4.74	20	

SPF Water Engineering

ACZ Project ID: ***L19172***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367398													
WG367398ICV	ICV	07/17/14 9:47	MS140513-1	.05		.04996	mg/L	99.9	90	110			
WG367398ICB	ICB	07/17/14 9:51				U	mg/L		-0.0006	0.0006			
WG367398LFB	LFB	07/17/14 10:01	MSDOUBLE	.1		.09673	mg/L	96.7	85	115			
L19171-01AS	AS	07/17/14 10:08	MSDOUBLE	.1	U	.09528	mg/L	95.3	70	130			
L19171-01ASD	ASD	07/17/14 10:11	MSDOUBLE	.1	U	.09244	mg/L	92.4	70	130	3.03	20	
L19208-01AS	AS	07/17/14 10:54	MSDOUBLE	1	U	.9753	mg/L	97.5	70	130			
L19208-01ASD	ASD	07/17/14 10:58	MSDOUBLE	1	U	.9221	mg/L	92.2	70	130	5.61	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367383													
WG367383ICV	ICV	07/10/14 21:37	MS140513-1	.05		.04955	mg/L	99.1	90	110			
WG367383ICB	ICB	07/10/14 21:41				U	mg/L		-0.0006	0.0006			
WG367318LRB	LRB	07/10/14 21:44				U	mg/L		-0.00044	0.00044			
WG367318LFB	LFB	07/10/14 21:47	MS140625-3	.05005		.05005	mg/L	100	85	115			
L19202-03LFM	LFM	07/10/14 22:23	MS140625-3	.05005	.0011	.05015	mg/L	98	70	130			
L19202-03LFMD	LFMD	07/10/14 22:27	MS140625-3	.05005	.0011	.05175	mg/L	101.2	70	130	3.14	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG366953													
WG366953ICV	ICV	07/02/14 19:53	II140701-2	2		1.943	mg/L	97.2	95	105			
WG366953ICB	ICB	07/02/14 19:59				U	mg/L		-0.03	0.03			
WG366953LFB	LFB	07/02/14 20:11	II140611-2	.5005		.525	mg/L	104.9	85	115			
L19172-01AS	AS	07/02/14 21:33	II140611-2	.5005	U	.54	mg/L	107.9	85	115			
L19172-01ASD	ASD	07/02/14 21:36	II140611-2	.5005	U	.53	mg/L	105.9	85	115	1.87	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG367065													
WG367065ICV	ICV	07/07/14 12:31	II140624-2	2		1.995	mg/L	99.8	95	105			
WG367065ICB	ICB	07/07/14 12:37				U	mg/L		-0.03	0.03			
WG367003LRB	LRB	07/07/14 12:50				U	mg/L		-0.022	0.022			
WG367003LFB	LFB	07/07/14 12:53	II140611-2	.5005		.527	mg/L	105.3	85	115			
L19162-03LFM	LFM	07/07/14 13:08	II140611-2	.5005	3.27	3.548	mg/L	55.5	70	130			M3
L19162-03LFMD	LFMD	07/07/14 13:11	II140611-2	.5005	3.27	3.534	mg/L	52.7	70	130	0.4	20	M3

SPF Water Engineering ACZ Project ID: ***L19172***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19172-01	WG367065	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367383	Manganese, total	M200.8 ICP-MS	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
	WG367065	Zinc, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367265	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367260	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366918	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L19172***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L19172-02	WG367065	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG367265	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367316	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367313	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367260	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG366918	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG367265	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 2nd Quarter 2014 Sampling

ACZ Project ID: L19172
Date Received: 07/01/2014 09:57
Received By: mtb
Date Printed: 7/1/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA19933	1.7	13	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L19172

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 2nd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**Method 1631						
59763	6/27/14 14:35	GW	8	X							
Bishop	6/27/14 17:30	GW	8	X							
mercury trip blank	6/27/14 14:30	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	6-30-14 8:00	WPC	7/1/14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L19172 Chain of Custody

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO31482

Bill to Account: Bill to ACZ
Ship Date Requested: 05/07/2014
Request Placed at: 05/05/2014 10:29
Service Requested: UPS SecondDay

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	4	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	272	LABELS	Sample Labels	ACZ supplied labels for sample containers
	4	TRIP CN		
	4	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	box	Small	55	1Z8101300275007472

Quote number: SPF-2014-GW
Sample Quantity: 33

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	250 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	500 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 01, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20544

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 16, 2014. This project has been assigned to ACZ's project number, L20544. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20544. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 31, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 01, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20544

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on September 16, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20544. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L20544. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L20544-01***
Date Sampled: *09/11/14 10:21*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 9:38	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 13:27	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 18:21	mss2
Total Hot Plate Digestion	M200.2 ICP								09/23/14 11:18	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/24/14 11:21	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L20544-01***
Date Sampled: *09/11/14 10:21*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.08	B		mg/L	0.03	0.2	09/19/14 0:00	jjc
Aluminum, total	M200.7 ICP	1	4.70		*	mg/L	0.03	0.2	09/24/14 21:15	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/24/14 4:15	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/25/14 22:51	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0116			mg/L	0.0002	0.001	09/24/14 4:15	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0157			mg/L	0.0002	0.001	09/25/14 22:51	pmc
Barium, dissolved	M200.7 ICP	1	0.003	B		mg/L	0.003	0.02	09/19/14 0:00	jjc
Barium, total	M200.7 ICP	1	0.010	B		mg/L	0.003	0.02	09/24/14 21:15	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:15	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	09/25/14 22:51	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:00	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:15	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	09/19/14 0:00	jjc
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	09/24/14 21:15	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:15	pmc
Cadmium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	09/25/14 22:51	pmc
Calcium, dissolved	M200.7 ICP	1	7.9			mg/L	0.1	0.5	09/19/14 0:00	jjc
Calcium, total	M200.7 ICP	1	10.6			mg/L	0.1	0.5	09/24/14 21:15	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/24/14 4:15	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/25/14 22:51	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	09/24/14 4:15	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00024	B		mg/L	0.00005	0.0003	09/25/14 22:51	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 4:15	pmc
Copper, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.003	09/25/14 22:51	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:00	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:15	aeb
Iron, dissolved	M200.7 ICP	1	0.17		*	mg/L	0.02	0.05	09/19/14 0:00	jjc
Iron, total	M200.7 ICP	1	4.85		*	mg/L	0.02	0.05	09/24/14 21:15	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:15	pmc
Lead, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0005	09/25/14 22:51	pmc
Lithium, dissolved	M200.7 ICP	1	0.092			mg/L	0.008	0.04	09/19/14 0:00	jjc
Lithium, total	M200.7 ICP	1	0.091			mg/L	0.008	0.04	09/24/14 21:15	aeb
Magnesium, dissolved	M200.7 ICP	1	0.6	B		mg/L	0.2	1	09/19/14 0:00	jjc
Magnesium, total	M200.7 ICP	1	1.4			mg/L	0.2	1	09/24/14 21:15	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0283			mg/L	0.0005	0.003	09/24/14 4:15	pmc
Manganese, total	M200.8 ICP-MS	1	0.0522		*	mg/L	0.0005	0.003	09/25/14 22:51	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 9:19	las
Mercury, total	M1631, Atomic Fluorescence	2	7.1			ng/L	0.4	1	09/23/14 11:40	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0103			mg/L	0.0005	0.003	09/24/14 4:15	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0005	0.003	09/25/14 22:51	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/24/14 4:15	pmc
Nickel, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0006	0.003	09/25/14 22:51	pmc
Potassium, dissolved	M200.7 ICP	1	1			mg/L	0.2	1	09/19/14 0:00	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L20544-01***
Date Sampled: *09/11/14 10:21*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	1.2			mg/L	0.2	1	09/24/14 21:15	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:00	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:15	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/24/14 4:15	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/25/14 22:51	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:15	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 22:51	pmc
Sodium, dissolved	M200.7 ICP	1	173			mg/L	0.2	1	09/19/14 0:00	jjc
Sodium, total	M200.7 ICP	1	173			mg/L	0.2	1	09/24/14 21:15	aeb
Strontium, dissolved	M200.7 ICP	1	0.036			mg/L	0.005	0.03	09/19/14 0:00	jjc
Strontium, total	M200.7 ICP	1	0.051			mg/L	0.005	0.03	09/24/14 21:15	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:15	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 22:51	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 4:15	pmc
Tin, total	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	09/25/14 22:51	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:00	jjc
Titanium, total	M200.7 ICP	1	0.022	B		mg/L	0.005	0.03	09/24/14 21:15	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:15	pmc
Uranium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0005	09/25/14 22:51	pmc
Vanadium, dissolved	M200.8 ICP-MS	2		U	*	mg/L	0.0004	0.002	09/26/14 3:32	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0002	0.001	09/25/14 22:51	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:00	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:15	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PW-4

ACZ Sample ID: ***L20544-01***
Date Sampled: *09/11/14 10:21*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	198			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1	8.5	B		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	207		*	mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	5	38.0		*	mg/L	2.5	12.5	09/24/14 2:40	tcd
Conductivity @25C	SM2510B	1	826		*	umhos/cm	1	10	09/18/14 21:02	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 15:39	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:37	mpb
Fluoride	M300.0 - Ion Chromatography	5	2.01		*	mg/L	0.25	1.25	09/25/14 0:31	jlf
Hardness as CaCO3	SM2340B - Calculation		22			mg/L	0.8	4	10/01/14 8:32	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	09/25/14 0:04	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.12	B		mg/L	0.05	0.2	09/26/14 12:33	jlf
pH (lab)	SM4500H+ B									
pH		1	8.5	H	*	units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.4			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	09/25/14 22:31	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	510			mg/L	10	20	09/17/14 13:54	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1	168			mg/L	5	20	09/17/14 16:35	eaa
Sulfate	M300.0 - Ion Chromatography	5	130			mg/L	2.5	12.5	09/25/14 0:31	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L20544-02***
Date Sampled: *09/11/14 11:03*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 9:57	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 13:36	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 19:43	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/24/14 11:32	las
Total Hot Plate Digestion	M200.2 ICP								09/23/14 11:52	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L20544-02***
Date Sampled: *09/11/14 11:03*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B		mg/L	0.03	0.2	09/19/14 0:03	jjc
Aluminum, total	M200.7 ICP	1	0.83		*	mg/L	0.03	0.2	09/24/14 21:25	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/24/14 4:18	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/25/14 22:54	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0109			mg/L	0.0002	0.001	09/24/14 4:18	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0116			mg/L	0.0002	0.001	09/25/14 22:54	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	09/19/14 0:03	jjc
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	09/24/14 21:25	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:18	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	09/25/14 22:54	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:03	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:25	aeb
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	09/19/14 0:03	jjc
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	09/24/14 21:25	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:18	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 22:54	pmc
Calcium, dissolved	M200.7 ICP	1	3.4			mg/L	0.1	0.5	09/19/14 0:03	jjc
Calcium, total	M200.7 ICP	1	4			mg/L	0.1	0.5	09/24/14 21:25	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/24/14 4:18	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/25/14 22:54	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00040			mg/L	0.00005	0.0003	09/24/14 4:18	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	09/25/14 22:54	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 4:18	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 22:54	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:03	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:25	aeb
Iron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.02	0.05	09/19/14 0:03	jjc
Iron, total	M200.7 ICP	1	0.36		*	mg/L	0.02	0.05	09/24/14 21:25	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:18	pmc
Lead, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	09/25/14 22:54	pmc
Lithium, dissolved	M200.7 ICP	1	0.091			mg/L	0.008	0.04	09/19/14 0:03	jjc
Lithium, total	M200.7 ICP	1	0.091			mg/L	0.008	0.04	09/24/14 21:25	aeb
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	09/19/14 0:03	jjc
Magnesium, total	M200.7 ICP	1	0.5	B		mg/L	0.2	1	09/24/14 21:25	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0052			mg/L	0.0005	0.003	09/24/14 4:18	pmc
Manganese, total	M200.8 ICP-MS	1	0.0122		*	mg/L	0.0005	0.003	09/25/14 22:54	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 9:24	las
Mercury, total	M1631, Atomic Fluorescence	1	0.6			ng/L	0.2	0.5	09/23/14 11:56	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0096			mg/L	0.0005	0.003	09/24/14 4:18	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0099			mg/L	0.0005	0.003	09/25/14 22:54	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/24/14 4:18	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/25/14 22:54	pmc
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	09/19/14 0:03	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L20544-02***
Date Sampled: *09/11/14 11:03*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.9	B		mg/L	0.2	1	09/24/14 21:25	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:03	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:25	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/24/14 4:18	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/25/14 22:54	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:18	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 22:54	pmc
Sodium, dissolved	M200.7 ICP	1	144			mg/L	0.2	1	09/19/14 0:03	jjc
Sodium, total	M200.7 ICP	1	144			mg/L	0.2	1	09/24/14 21:25	aeb
Strontium, dissolved	M200.7 ICP	1	0.019	B		mg/L	0.005	0.03	09/19/14 0:03	jjc
Strontium, total	M200.7 ICP	1	0.023	B		mg/L	0.005	0.03	09/24/14 21:25	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:18	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 22:54	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 4:18	pmc
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	09/25/14 22:54	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:03	jjc
Titanium, total	M200.7 ICP	1	0.012	B		mg/L	0.005	0.03	09/24/14 21:25	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:18	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	09/25/14 22:54	pmc
Vanadium, dissolved	M200.8 ICP-MS	2		U	*	mg/L	0.0004	0.002	09/26/14 3:35	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0002	0.001	09/25/14 22:54	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:03	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:25	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GW-4

ACZ Sample ID: ***L20544-02***
Date Sampled: *09/11/14 11:03*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	189			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1	14.9	B		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	204			mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	25.4		*	mg/L	0.5	2.5	09/24/14 2:58	tcd
Conductivity @25C	SM2510B	1	660			umhos/cm	1	10	09/18/14 21:10	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 15:41	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:38	mpb
Fluoride	M300.0 - Ion Chromatography	1	2.13		*	mg/L	0.05	0.25	09/25/14 1:24	jlf
Hardness as CaCO3	SM2340B - Calculation		9.7			mg/L	0.8	4	10/01/14 8:32	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	09/25/14 0:05	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U		mg/L	0.05	0.2	09/26/14 12:34	jlf
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.2			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/25/14 22:34	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390			mg/L	10	20	09/17/14 13:55	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1	18	B		mg/L	5	20	09/17/14 16:37	eaa
Sulfate	M300.0 - Ion Chromatography	1	81.6			mg/L	0.5	2.5	09/25/14 1:24	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L20544-03***
Date Sampled: *09/11/14 11:53*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 10:07	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 13:45	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 21:04	mss2
Total Hot Plate Digestion	M200.2 ICP								09/23/14 12:04	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/24/14 11:42	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L20544-03***
Date Sampled: *09/11/14 11:53*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	09/19/14 0:12	jjc
Aluminum, total	M200.7 ICP	1	7.26		*	mg/L	0.03	0.2	09/24/14 21:28	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	09/24/14 4:21	pmc
Antimony, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	09/25/14 22:57	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.1644			mg/L	0.0002	0.001	09/24/14 4:21	pmc
Arsenic, total	M200.8 ICP-MS	1	0.1927			mg/L	0.0002	0.001	09/25/14 22:57	pmc
Barium, dissolved	M200.7 ICP	1	0.018	B		mg/L	0.003	0.02	09/19/14 0:12	jjc
Barium, total	M200.7 ICP	1	0.118			mg/L	0.003	0.02	09/24/14 21:28	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/24/14 4:21	pmc
Beryllium, total	M200.8 ICP-MS	1	0.00066			mg/L	0.00005	0.0003	09/25/14 22:57	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:12	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:28	aeb
Boron, dissolved	M200.7 ICP	1	0.15			mg/L	0.01	0.05	09/19/14 0:12	jjc
Boron, total	M200.7 ICP	1	0.15			mg/L	0.01	0.05	09/24/14 21:28	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:21	pmc
Cadmium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0005	09/25/14 22:57	pmc
Calcium, dissolved	M200.7 ICP	1	40			mg/L	0.1	0.5	09/19/14 0:12	jjc
Calcium, total	M200.7 ICP	1	42.9			mg/L	0.1	0.5	09/24/14 21:28	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/24/14 4:21	pmc
Chromium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.002	09/25/14 22:57	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00174			mg/L	0.00005	0.0003	09/24/14 4:21	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00261			mg/L	0.00005	0.0003	09/25/14 22:57	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 4:21	pmc
Copper, total	M200.8 ICP-MS	1	0.0047			mg/L	0.0005	0.003	09/25/14 22:57	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:12	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:28	aeb
Iron, dissolved	M200.7 ICP	1	0.71		*	mg/L	0.02	0.05	09/19/14 0:12	jjc
Iron, total	M200.7 ICP	1	7.31		*	mg/L	0.02	0.05	09/24/14 21:28	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:21	pmc
Lead, total	M200.8 ICP-MS	1	0.0058			mg/L	0.0001	0.0005	09/25/14 22:57	pmc
Lithium, dissolved	M200.7 ICP	1	0.570			mg/L	0.008	0.04	09/19/14 0:12	jjc
Lithium, total	M200.7 ICP	1	0.585			mg/L	0.008	0.04	09/24/14 21:28	aeb
Magnesium, dissolved	M200.7 ICP	1	3.1			mg/L	0.2	1	09/19/14 0:12	jjc
Magnesium, total	M200.7 ICP	1	4.1			mg/L	0.2	1	09/24/14 21:28	aeb
Manganese, dissolved	M200.8 ICP-MS	3	0.389		*	mg/L	0.002	0.008	09/26/14 3:38	pmc
Manganese, total	M200.8 ICP-MS	5	0.519		*	mg/L	0.003	0.01	09/25/14 23:44	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	09/30/14 9:29	las
Mercury, total	M1631, Atomic Fluorescence	2	34			ng/L	0.4	1	09/23/14 12:01	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0251			mg/L	0.0005	0.003	09/24/14 4:21	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0263			mg/L	0.0005	0.003	09/25/14 22:57	pmc
Nickel, dissolved	M200.8 ICP-MS	1	0.0057			mg/L	0.0006	0.003	09/24/14 4:21	pmc
Nickel, total	M200.8 ICP-MS	1	0.0091			mg/L	0.0006	0.003	09/25/14 22:57	pmc
Potassium, dissolved	M200.7 ICP	1	9.7			mg/L	0.2	1	09/19/14 0:12	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L20544-03***
Date Sampled: *09/11/14 11:53*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	11			mg/L	0.2	1	09/24/14 21:28	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:12	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:28	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0003			mg/L	0.0001	0.0003	09/24/14 4:21	pmc
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	09/25/14 22:57	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:21	pmc
Silver, total	M200.8 ICP-MS	1	0.00013	B		mg/L	0.00005	0.0003	09/25/14 22:57	pmc
Sodium, dissolved	M200.7 ICP	1	140			mg/L	0.2	1	09/19/14 0:12	jjc
Sodium, total	M200.7 ICP	1	137			mg/L	0.2	1	09/24/14 21:28	aeb
Strontium, dissolved	M200.7 ICP	1	0.133			mg/L	0.005	0.03	09/19/14 0:12	jjc
Strontium, total	M200.7 ICP	1	0.152			mg/L	0.005	0.03	09/24/14 21:28	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:21	pmc
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	09/25/14 22:57	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 4:21	pmc
Tin, total	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	09/25/14 22:57	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:12	jjc
Titanium, total	M200.7 ICP	1	0.265			mg/L	0.005	0.03	09/24/14 21:28	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	09/24/14 4:21	pmc
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	09/25/14 22:57	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0002	0.001	09/24/14 4:21	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0086			mg/L	0.0002	0.001	09/25/14 22:57	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:12	jjc
Zinc, total	M200.7 ICP	1	0.03	B		mg/L	0.01	0.05	09/24/14 21:28	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59766

ACZ Sample ID: ***L20544-03***
Date Sampled: *09/11/14 11:53*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	95.2			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	95.2		*	mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	5	11.3	B	*	mg/L	2.5	12.5	09/24/14 3:16	tcd
Conductivity @25C	SM2510B	1	907		*	umhos/cm	1	10	09/18/14 21:18	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 15:42	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:39	mpb
Fluoride	M300.0 - Ion Chromatography	5	1.40		*	mg/L	0.25	1.25	09/25/14 1:42	jlf
Hardness as CaCO3	SM2340B - Calculation		113			mg/L	0.8	4	10/01/14 8:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	09/25/14 0:06	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.20		*	mg/L	0.05	0.2	09/26/14 12:36	jlf
pH (lab)	SM4500H+ B									
pH		1	7.4	H	*	units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.5			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.84		*	mg/L	0.01	0.05	09/25/14 22:36	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	670			mg/L	10	20	09/17/14 13:57	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	2	190			mg/L	10	40	09/17/14 16:39	eaa
Sulfate	M300.0 - Ion Chromatography	5	300			mg/L	2.5	12.5	09/25/14 1:42	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L20544-04***
Date Sampled: *09/11/14 14:05*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 10:16	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 13:54	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 21:45	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/24/14 11:53	las
Total Hot Plate Digestion	M200.2 ICP								09/23/14 12:16	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L20544-04***
Date Sampled: *09/11/14 14:05*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/19/14 0:15	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/24/14 21:37	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/24/14 4:24	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/25/14 23:00	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0267			mg/L	0.0002	0.001	09/24/14 4:24	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0304			mg/L	0.0002	0.001	09/25/14 23:00	pmc
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	09/19/14 0:15	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	09/24/14 21:37	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:24	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 23:00	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:15	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:37	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/19/14 0:15	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	09/24/14 21:37	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:24	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 23:00	pmc
Calcium, dissolved	M200.7 ICP	1	29.8			mg/L	0.1	0.5	09/19/14 0:15	jjc
Calcium, total	M200.7 ICP	1	30.4			mg/L	0.1	0.5	09/24/14 21:37	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	09/24/14 4:24	pmc
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/25/14 23:00	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.00005	0.0003	09/24/14 4:24	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00009	B		mg/L	0.00005	0.0003	09/25/14 23:00	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 4:24	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 23:00	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:15	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:37	aeb
Iron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.02	0.05	09/19/14 0:15	jjc
Iron, total	M200.7 ICP	1	0.26		*	mg/L	0.02	0.05	09/24/14 21:37	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:24	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 23:00	pmc
Lithium, dissolved	M200.7 ICP	1	0.066			mg/L	0.008	0.04	09/19/14 0:15	jjc
Lithium, total	M200.7 ICP	1	0.064			mg/L	0.008	0.04	09/24/14 21:37	aeb
Magnesium, dissolved	M200.7 ICP	1	3.5			mg/L	0.2	1	09/19/14 0:15	jjc
Magnesium, total	M200.7 ICP	1	3.6			mg/L	0.2	1	09/24/14 21:37	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	09/24/14 4:24	pmc
Manganese, total	M200.8 ICP-MS	1	0.0070		*	mg/L	0.0005	0.003	09/25/14 23:00	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 9:34	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/23/14 12:06	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0005	0.003	09/24/14 4:24	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0048			mg/L	0.0005	0.003	09/25/14 23:00	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/24/14 4:24	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/25/14 23:00	pmc
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	09/19/14 0:15	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L20544-04***
Date Sampled: *09/11/14 14:05*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.2	1	09/24/14 21:37	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:15	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:37	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	09/24/14 4:24	pmc
Selenium, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0003	09/25/14 23:00	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 4:24	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 23:00	pmc
Sodium, dissolved	M200.7 ICP	1	38.2			mg/L	0.2	1	09/19/14 0:15	jjc
Sodium, total	M200.7 ICP	1	38.7			mg/L	0.2	1	09/24/14 21:37	aeb
Strontium, dissolved	M200.7 ICP	1	0.120			mg/L	0.005	0.03	09/19/14 0:15	jjc
Strontium, total	M200.7 ICP	1	0.119			mg/L	0.005	0.03	09/24/14 21:37	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 4:24	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 23:00	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 4:24	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/25/14 23:00	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:15	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 21:37	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	09/24/14 4:24	pmc
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	09/25/14 23:00	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0089			mg/L	0.0002	0.001	09/24/14 4:24	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0111			mg/L	0.0002	0.001	09/25/14 23:00	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:15	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:37	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: PW-1

ACZ Sample ID: ***L20544-04***
Date Sampled: *09/11/14 14:05*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	137			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	137			mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	7.89		*	mg/L	0.5	2.5	09/24/14 3:34	tcd
Conductivity @25C	SM2510B	1	351			umhos/cm	1	10	09/18/14 21:27	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 15:43	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:40	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.41		*	mg/L	0.05	0.25	09/25/14 2:00	jlf
Hardness as CaCO3	SM2340B - Calculation		89			mg/L	0.8	4	10/01/14 8:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.62			mg/L	0.02	0.1	09/25/14 0:09	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 12:38	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.2			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.01	B	*	mg/L	0.01	0.05	09/25/14 22:37	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	260			mg/L	10	20	09/17/14 13:59	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/17/14 16:42	eaa
Sulfate	M300.0 - Ion Chromatography	1	29.2			mg/L	0.5	2.5	09/25/14 2:00	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20544***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371405													
WG371405PBW1	PBW	09/18/14 16:53				U	mg/L		-20	20			
WG371405LCSW3	LCSW	09/18/14 17:11	WC140910-	820.0001		800	mg/L	97.6	90	110			
WG371405LCSW6	LCSW	09/18/14 20:18	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371405PBW2	PBW	09/18/14 20:25				U	mg/L		-20	20			
L20545-03DUP	DUP	09/18/14 22:03			146	147	mg/L				0.7	20	
WG371405LCSW9	LCSW	09/18/14 23:39	WC140910-	820.0001		799	mg/L	97.4	90	110			
WG371405PBW3	PBW	09/18/14 23:46				U	mg/L		-20	20			
WG371405LCSW12	LCSW	09/19/14 2:59	WC140910-	820.0001		831	mg/L	101.3	90	110			
WG371405PBW4	PBW	09/19/14 3:05				U	mg/L		-20	20			
WG371405LCSW15	LCSW	09/19/14 12:32	WC140910-	820.0001		822	mg/L	100.2	90	110			
WG371405PBW5	PBW	09/19/14 12:39				U	mg/L		-20	20			
WG371405LCSW18	LCSW	09/19/14 14:32	WC140910-	820.0001		824	mg/L	100.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.039	mg/L	102	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.09	0.09			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0015		1.087	mg/L	108.5	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0015	U	1.126	mg/L	112.4	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0015	U	1.129	mg/L	112.7	85	115	0.27	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.027	mg/L	101.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.09	0.09			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.066	0.066			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0015		1.09	mg/L	108.8	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0015	4.7	12.81	mg/L	809.8	70	130			M3
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0015	4.7	12.43	mg/L	771.8	70	130	3.01	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.02002		.02051	mg/L	102.4	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0012	0.0012			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.01		.00933	mg/L	93.3	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.01	.0013	.00992	mg/L	86.2	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.01	.0013	.0105	mg/L	92	70	130	5.68	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.01	U	.0099	mg/L	99	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.01	U	.00991	mg/L	99.1	70	130	0.1	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.02002		.02071	mg/L	103.4	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0012	0.0012			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00088	0.00088			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.01		.01032	mg/L	103.2	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.01	U	.01075	mg/L	107.5	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.01	U	.01071	mg/L	107.1	70	130	0.37	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05205	mg/L	104.1	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0006	0.0006			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.0501		.0478	mg/L	95.4	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.0501	.001	.05198	mg/L	101.8	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.0501	.001	.05222	mg/L	102.2	70	130	0.46	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.0501	.0267	.07297	mg/L	92.4	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.0501	.0267	.07422	mg/L	94.9	70	130	1.7	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05383	mg/L	107.7	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0006	0.0006			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00044	0.00044			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.0501		.05204	mg/L	103.9	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.0501	.0004	.05611	mg/L	111.2	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.0501	.0004	.05391	mg/L	106.8	70	130	4	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.995	mg/L	99.8	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.009	0.009			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5		.5108	mg/L	102.2	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5	.026	.5393	mg/L	102.7	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5	.026	.5369	mg/L	102.2	85	115	0.45	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.993	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.009	0.009			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.0066	0.0066			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5		.5215	mg/L	104.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5	.01	.5316	mg/L	104.3	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5	.01	.531	mg/L	104.2	70	130	0.11	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.04713	mg/L	94.3	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.00015	0.00015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04565	mg/L	91.2	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	U	.04676	mg/L	93.4	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	U	.04755	mg/L	95	70	130	1.68	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	U	.04291	mg/L	85.7	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	U	.0432	mg/L	86.3	70	130	0.67	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.04862	mg/L	97.2	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.00015	0.00015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00011	0.00011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.0479	mg/L	95.7	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	.00198	.05046	mg/L	96.9	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	.00198	.05038	mg/L	96.7	70	130	0.16	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.048	mg/L	102.4	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.12	0.12			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.999		1.029	mg/L	103	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.999	U	1.078	mg/L	107.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.999	U	1.062	mg/L	106.3	85	115	1.5	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.016	mg/L	100.8	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.12	0.12			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.088	0.088			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.999		1.069	mg/L	107	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.999	U	1.08	mg/L	108.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.999	U	1.073	mg/L	107.4	70	130	0.65	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.061	mg/L	103.1	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.03	0.03			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.534	mg/L	106.7	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	.01	.552	mg/L	108.3	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	.01	.545	mg/L	106.9	85	115	1.28	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.048	mg/L	102.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.03	0.03			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.022	0.022			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.523	mg/L	104.5	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	.13	.651	mg/L	104.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	.13	.643	mg/L	102.5	70	130	1.24	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05005	mg/L	100.1	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.0501		.04687	mg/L	93.6	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.0501	U	.04786	mg/L	95.5	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.0501	U	.0495	mg/L	98.8	70	130	3.37	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.0501	U	.04797	mg/L	95.7	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.0501	U	.04702	mg/L	93.9	70	130	2	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05059	mg/L	101.2	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.0501		.04931	mg/L	98.4	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.0501	.0003	.04965	mg/L	98.5	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.0501	.0003	.04899	mg/L	97.2	70	130	1.34	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		100.24	mg/L	100.2	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	67.99189		71.26	mg/L	104.8	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	67.99189	217	281.7	mg/L	95.2	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	67.99189	217	282.6	mg/L	96.5	85	115	0.32	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		99.74	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				.1	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	67.99189		73.61	mg/L	108.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	67.99189	10.6	84.31	mg/L	108.4	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	67.99189	10.6	83.52	mg/L	107.2	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	19.94		19.1	mg/L	95.8	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371612													
WG371612LFB1	LFB	09/23/14 15:20	WI140610-6	30		30.5	mg/L	101.7	90	110			
L20535-01DUP	DUP	09/24/14 0:35			U	U	mg/L				0	20	RA
L20535-02AS	AS	09/24/14 1:47	WI140610-6	150	U	195	mg/L	130	90	110			M1
WG371612LFB2	LFB	09/24/14 11:58	WI140610-6	30		30.2	mg/L	100.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05011	mg/L	100.2	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0015	0.0015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04726	mg/L	94.4	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	.0015	.04907	mg/L	95	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	.0015	.04918	mg/L	95.3	70	130	0.22	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	.0006	.04416	mg/L	87	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	.0006	.0443	mg/L	87.3	70	130	0.32	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05124	mg/L	102.5	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0015	0.0015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.0011	0.0011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.04965	mg/L	99.2	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	U	.05146	mg/L	102.8	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	U	.05021	mg/L	100.3	70	130	2.46	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05173	mg/L	103.5	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.00015	0.00015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04792	mg/L	95.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	.00041	.04885	mg/L	96.8	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	.00041	.04915	mg/L	97.4	70	130	0.61	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	.00014	.04793	mg/L	95.5	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	.00014	.04722	mg/L	94.1	70	130	1.49	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05224	mg/L	104.5	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.00015	0.00015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00011	0.00011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.05119	mg/L	102.3	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	.0115	.06193	mg/L	100.8	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	.0115	.06178	mg/L	100.5	70	130	0.24	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371405													
WG371405LCSW2	LCSW	09/18/14 16:57	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371405LCSW5	LCSW	09/18/14 20:05	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20545-03DUP	DUP	09/18/14 22:03			374	372	umhos/cm				0.5	20	
WG371405LCSW8	LCSW	09/18/14 23:27	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371405LCSW11	LCSW	09/19/14 2:46	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371405LCSW14	LCSW	09/19/14 12:18	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371405LCSW17	LCSW	09/19/14 14:19	PCN45704	1409		1440	umhos/cm	102.2	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05039	mg/L	100.8	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0015	0.0015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05		.04634	mg/L	92.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05	.0024	.04817	mg/L	91.5	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05	.0024	.04884	mg/L	92.9	70	130	1.38	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05	U	.04247	mg/L	84.9	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05	U	.0428	mg/L	85.6	70	130	0.77	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05113	mg/L	102.3	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0015	0.0015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.0011	0.0011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05		.04927	mg/L	98.5	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05	.0014	.05171	mg/L	100.6	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05	.0014	.04971	mg/L	96.6	70	130	3.94	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371751													
WG371751ICV	ICV	09/24/14 15:34	WI140918-1	.3		.2852	mg/L	95.1	90	110			
WG371751ICB	ICB	09/24/14 15:35				U	mg/L		-0.003	0.003			
WG371716LRB	LRB	09/24/14 15:36				U	mg/L		-0.003	0.003			
WG371716LFB	LFB	09/24/14 15:37	WI140918-4	.2		.1896	mg/L	94.8	90	110			
L20512-03LFM	LFM	09/24/14 15:38	WI140918-4	.2	U	.2004	mg/L	100.2	90	110			
L20544-01DUP	DUP	09/24/14 15:40			U	U	mg/L				0	20	RA

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371751													
WG371751ICV	ICV	09/24/14 15:34	WI140918-1	.3		.2852	mg/L	95.1	90	110			
WG371751ICB	ICB	09/24/14 15:35				U	mg/L		-0.003	0.003			
WG371756													
WG371647LRB	LRB	09/24/14 16:24				U	mg/L		-0.003	0.003			
WG371647LFB	LFB	09/24/14 16:25	WI140918-6	.2		.1867	mg/L	93.4	90	110			
L20507-01DUP	DUP	09/24/14 16:27			U	U	mg/L				0	20	RA
L20507-02LFM	LFM	09/24/14 16:29	WI140918-6	.2	U	.1872	mg/L	93.6	90	110			
L20659-02LFM	LFM	09/24/14 16:49	WI140918-6	.2	U	.189	mg/L	94.5	90	110			
L20659-02DUP	DUP	09/24/14 16:50			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	4.02		3.76	mg/L	93.5	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-0.15	0.15			
WG371757													
WG371757LFB1	LFB	09/24/14 18:32	WI140610-6	1.5		1.65	mg/L	110	90	110			
L20535-02DUP	DUP	09/24/14 23:19			U	U	mg/L				0	20	RA
L20535-03AS	AS	09/24/14 23:55	WI140610-6	7.5	U	7.98	mg/L	106.4	90	110			
WG371757LFB2	LFB	09/25/14 3:12	WI140610-6	1.5		1.57	mg/L	104.7	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.09	mg/L	104.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.001		1.05	mg/L	104.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.001	U	1.1	mg/L	109.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.001	U	1.08	mg/L	107.9	85	115	1.83	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.1	mg/L	105	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.001		1.11	mg/L	110.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.001	U	1.08	mg/L	107.9	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.001	U	1.08	mg/L	107.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.991	mg/L	99.6	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.06	0.06			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0014		1.042	mg/L	104.1	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0014	27.4	27.12	mg/L	-28	85	115			M3
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0014	27.4	27.09	mg/L	-31	85	115	0.11	20	M3

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.99	mg/L	99.5	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.06	0.06			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.044	0.044			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0014		1.124	mg/L	112.2	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0014	4.85	7.574	mg/L	272	70	130			M3
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0014	4.85	7.393	mg/L	253.9	70	130	2.42	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05193	mg/L	103.9	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04692	mg/L	93.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	.0014	.0489	mg/L	94.9	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	.0014	.05024	mg/L	97.6	70	130	2.7	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	U	.04876	mg/L	97.4	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	U	.0477	mg/L	95.3	70	130	2.2	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05236	mg/L	104.7	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.04938	mg/L	98.7	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	.0017	.0521	mg/L	100.7	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	.0017	.05239	mg/L	101.3	70	130	0.56	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.0302	mg/L	101.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.024	0.024			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.002		1.024	mg/L	102.2	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.002	.042	1.087	mg/L	104.3	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.002	.042	1.078	mg/L	103.4	85	115	0.83	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.0335	mg/L	101.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.024	0.024			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.0176	0.0176			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.002		1.066	mg/L	106.4	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.002	.091	1.154	mg/L	106.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.002	.091	1.158	mg/L	106.5	70	130	0.35	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		98.03	mg/L	98	95	105			
WG371381ICB	ICB	09/18/14 23:23				.24	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	50.00283		50.01	mg/L	100	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	50.00283	29.6	80.21	mg/L	101.2	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	50.00283	29.6	79.93	mg/L	100.7	85	115	0.35	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		97.32	mg/L	97.3	95	105			
WG371723ICB	ICB	09/24/14 20:47				.32	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				.28	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	50.00283		51.31	mg/L	102.6	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	50.00283	1.4	53.17	mg/L	103.5	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	50.00283	1.4	52.62	mg/L	102.4	70	130	1.04	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05141	mg/L	102.8	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0015	0.0015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.0501		.04795	mg/L	95.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.0501	.0138	.062	mg/L	96.2	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.0501	.0138	.06241	mg/L	97	70	130	0.66	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.0501	.002	.04988	mg/L	95.6	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.0501	.002	.04945	mg/L	94.7	70	130	0.87	20	
WG371766													
WG371766ICV	ICV	09/26/14 2:39	MS140723-1	.05		.05123	mg/L	102.5	90	110			
WG371766ICB	ICB	09/26/14 2:42				U	mg/L		-0.0015	0.0015			
WG371766LFB	LFB	09/26/14 2:45	MS140904-3	.0501		.05102	mg/L	101.8	85	115			
L20573-02AS	AS	09/26/14 4:00	MS140904-3	.0501	4.43	4.377	mg/L	-105.8	70	130			M3
L20573-02ASD	ASD	09/26/14 4:04	MS140904-3	.0501	4.43	4.386	mg/L	-87.8	70	130	0.21	20	M3

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05186	mg/L	103.7	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0015	0.0015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.0011	0.0011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.0501		.05199	mg/L	103.8	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.0501	4.7	4.667	mg/L	-65.9	70	130			M3
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.0501	4.7	4.722	mg/L	43.9	70	130	1.17	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
L20545-01MS	MS	09/30/14 9:44	HG140929-6	2	.3	2.27	ng/L	98.5	71	125			
L20545-01MSD	MSD	09/30/14 9:49	HG140929-6	2	.3	2.32	ng/L	101	71	125	2.18	24	
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20544***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371390													
WG371390ICV	ICV	09/18/14 13:25	HG140819-3	10		10.1	ng/L	101	79	121			
WG371390ICB	ICB	09/18/14 13:30				U	ng/L		-0.5	0.5			
WG371613													
WG371613CCV1	CCV	09/23/14 11:20	HG140819-3	10		9.69	ng/L	96.9	76.5	123.4			
WG371613CCB1	CCB	09/23/14 11:25				U	ng/L		-0.5	0.5			
WG371613PQV	PQV	09/23/14 11:30	HG140819-4	.5		.48	ng/L	96	70	130			
WG371613LFB	LFB	09/23/14 11:35	HG140819-5	2		1.91	ng/L	95.5	71	125			
L20544-01MS	MS	09/23/14 11:46	HG2XPREP	8	7.1	10.86	ng/L	94	71	125			
L20544-01MSD	MSD	09/23/14 11:51	HG2XPREP	8	7.1	10.92	ng/L	95.5	71	125	0.55	24	
WG371613CCV2	CCV	09/23/14 12:21	HG140819-3	10		9.59	ng/L	95.9	76.5	123.4			
WG371613CCB2	CCB	09/23/14 12:26				U	ng/L		-0.5	0.5			
WG371613CCV3	CCV	09/23/14 13:17	HG140819-3	10		9.53	ng/L	95.3	76.5	123.4			
WG371613CCB3	CCB	09/23/14 13:22				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.01998		.01964	mg/L	98.3	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0015	0.0015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.0502		.04756	mg/L	94.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.0502	U	.04852	mg/L	96.7	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.0502	U	.04997	mg/L	99.5	70	130	2.94	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.0502	.0045	.05384	mg/L	98.3	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.0502	.0045	.05246	mg/L	95.5	70	130	2.6	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.01998		.01961	mg/L	98.1	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0015	0.0015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.0011	0.0011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.0502		.05066	mg/L	100.9	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.0502	U	.05091	mg/L	101.4	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.0502	U	.05108	mg/L	101.8	70	130	0.33	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05191	mg/L	103.8	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0018	0.0018			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05		.04813	mg/L	96.3	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05	.0009	.0475	mg/L	93.2	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05	.0009	.04795	mg/L	94.1	70	130	0.94	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05	U	.04323	mg/L	86.5	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05	U	.0432	mg/L	86.4	70	130	0.07	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05313	mg/L	106.3	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0018	0.0018			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00132	0.00132			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05		.05012	mg/L	100.2	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05	.0179	.07054	mg/L	105.3	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05	.0179	.06802	mg/L	100.2	70	130	3.64	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371762													
WG371762ICV	ICV	09/24/14 20:53	WI140718-9	2.416		2.256	mg/L	93.4	90	110			
WG371762ICB	ICB	09/24/14 20:54				U	mg/L		-0.06	0.06			
WG371769													
WG371769LFB	LFB	09/24/14 23:49	WI140719-4	2		1.97	mg/L	98.5	90	110			
L20520-01AS	AS	09/24/14 23:51	WI140719-4	2	U	1.966	mg/L	98.3	90	110			
L20520-02DUP	DUP	09/24/14 23:53			.56	.563	mg/L				0.5	20	
L20544-03AS	AS	09/25/14 0:07	WI140719-4	2	U	1.989	mg/L	99.5	90	110			
L20544-04DUP	DUP	09/25/14 0:10			.62	.621	mg/L				0.2	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371894													
WG371894ICV	ICV	09/26/14 11:59	WI131021-1	1.003		1.02	mg/L	101.7	90	110			
WG371894ICB	ICB	09/26/14 12:02				U	mg/L		-0.15	0.15			
WG371894LFB1	LFB	09/26/14 12:03	WI140113-8	1		.95	mg/L	95	90	110			
L20525-06AS	AS	09/26/14 12:21	WI140113-8	1	.98	1.897	mg/L	91.7	90	110			
L20525-07DUP	DUP	09/26/14 12:23			.56	.536	mg/L				4.4	20	
L20544-03AS	AS	09/26/14 12:37	WI140113-8	1	.2	1.214	mg/L	101.4	90	110			
L20544-04DUP	DUP	09/26/14 12:39			U	U	mg/L				0	20	RA
WG371894LFB2	LFB	09/26/14 12:52	WI140113-8	1		.929	mg/L	92.9	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371523													
WG371523LCSW1	LCSW	09/20/14 12:06	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20545-03DUP	DUP	09/20/14 13:15			8.2	8.2	units				0	20	
WG371523LCSW3	LCSW	09/20/14 14:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371523LCSW5	LCSW	09/20/14 17:39	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371523LCSW7	LCSW	09/20/14 18:18	PCN45660	5.99		6	units	100.2	5.99	6.01			

SPF Water Engineering

ACZ Project ID: ***L20544***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371852													
WG371852ICV	ICV	09/25/14 22:25	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG371852ICB	ICB	09/25/14 22:28				U	mg/L		-0.03	0.03			
WG371759LRB	LRB	09/25/14 22:29				U	mg/L		-0.03	0.03			
WG371759LFB	LFB	09/25/14 22:30	WI140918-1	.5		.475	mg/L	95	90	110			
L20544-01LFM	LFM	09/25/14 22:32	WI140918-1	.5	.04	.512	mg/L	94.4	90	110			
L20544-02DUP	DUP	09/25/14 22:35			.02	.018	mg/L				10.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	20		19.94	mg/L	99.7	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	98.07852		100.8	mg/L	102.8	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	98.07852	7.6	111.6	mg/L	106	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	98.07852	7.6	111.1	mg/L	105.5	85	115	0.45	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	20		19.93	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	98.07852		102.6	mg/L	104.6	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	98.07852	1.2	103	mg/L	103.8	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	98.07852	1.2	102.9	mg/L	103.7	70	130	0.1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371301													
WG371301PBW	PBW	09/17/14 13:23				U	mg/L		-20	20			
WG371301LCSW	LCSW	09/17/14 13:24	PCN46225	260		244	mg/L	93.8	80	120			
L20545-01DUP	DUP	09/17/14 14:02			290	296	mg/L				2	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371324													
WG371324PBW	PBW	09/17/14 16:20				U	mg/L		-15	15			
WG371324LCSW	LCSW	09/17/14 16:21	PCN46225	160		148	mg/L	92.5	80	120			
L20544-03DUP	DUP	09/17/14 16:40			190	206	mg/L				8.1	10	
L20553-01DUP	DUP	09/17/14 16:59			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L20544***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.03	mg/L	101.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0009		1.09	mg/L	108.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0009	U	1.07	mg/L	106.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0009	U	1.08	mg/L	107.9	85	115	0.93	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.02	mg/L	101	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0009		1.11	mg/L	110.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0009	U	1.11	mg/L	110.9	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0009	U	1.11	mg/L	110.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05103	mg/L	102.1	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05015		.04689	mg/L	93.5	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05015	U	.05103	mg/L	101.8	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05015	U	.05125	mg/L	102.2	70	130	0.43	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05015	.0039	.0525	mg/L	96.9	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05015	.0039	.05323	mg/L	98.4	70	130	1.38	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05113	mg/L	102.3	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05015		.04992	mg/L	99.5	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05015	U	.05033	mg/L	100.4	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05015	U	.04952	mg/L	98.7	70	130	1.62	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.02002		.02035	mg/L	101.6	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.00015	0.00015			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.01002		.009293	mg/L	92.7	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.01002	U	.009297	mg/L	92.8	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.01002	U	.00949	mg/L	94.7	70	130	2.05	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.01002	U	.009222	mg/L	92	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.01002	U	.009025	mg/L	90.1	70	130	2.16	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.02002		.02039	mg/L	101.8	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.00015	0.00015			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00011	0.00011			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.01002		.009877	mg/L	98.6	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.01002	U	.009862	mg/L	98.4	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.01002	U	.009747	mg/L	97.3	70	130	1.17	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		99.43	mg/L	99.4	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	100.0589		100.8	mg/L	100.7	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	100.0589	21.1	124.8	mg/L	103.6	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	100.0589	21.1	124.6	mg/L	103.4	85	115	0.16	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		98.62	mg/L	98.6	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	100.0589		102	mg/L	101.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	100.0589	173	277.7	mg/L	104.6	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	100.0589	173	274.2	mg/L	101.1	70	130	1.27	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.9808	mg/L	99	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.015	0.015			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.5157	mg/L	103	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	1.76	2.208	mg/L	89.5	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	1.76	2.212	mg/L	90.3	85	115	0.18	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.9758	mg/L	98.8	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.015	0.015			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.011	0.011			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.5199	mg/L	103.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	.051	.5716	mg/L	104	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	.051	.5703	mg/L	103.8	70	130	0.23	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	50.05		46.7	mg/L	93.3	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371757													
WG371757LFB1	LFB	09/24/14 18:32	WI140610-6	30		32.8	mg/L	109.3	90	110			
L20535-02DUP	DUP	09/24/14 23:19			126	126	mg/L				0	20	
L20535-03AS	AS	09/24/14 23:55	WI140610-6	150	201	348	mg/L	98	90	110			
WG371757LFB2	LFB	09/25/14 3:12	WI140610-6	30		30.3	mg/L	101	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05247	mg/L	104.9	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.0502		.04766	mg/L	94.9	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.0502	U	.04898	mg/L	97.6	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.0502	U	.05005	mg/L	99.7	70	130	2.16	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.0502	U	.05016	mg/L	99.9	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.0502	U	.04865	mg/L	96.9	70	130	3.06	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05441	mg/L	108.8	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.0502		.0512	mg/L	102	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.0502	U	.05232	mg/L	104.2	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.0502	U	.0525	mg/L	104.6	70	130	0.34	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.0501		.04948	mg/L	98.8	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04743	mg/L	94.8	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	U	.04603	mg/L	92	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	U	.04753	mg/L	95	70	130	3.21	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	U	.04888	mg/L	97.7	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	U	.04804	mg/L	96	70	130	1.73	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.0501		.05048	mg/L	100.8	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.05138	mg/L	102.7	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	.0007	.05244	mg/L	103.4	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	.0007	.05217	mg/L	102.8	70	130	0.52	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.0198	mg/L	101	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.015	0.015			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.005		1.03	mg/L	102.5	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.005	U	1.036	mg/L	103.1	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.005	U	1.034	mg/L	102.9	85	115	0.19	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.0285	mg/L	101.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.015	0.015			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.011	0.011			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.005		1.08	mg/L	107.5	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.005	.022	1.102	mg/L	107.5	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.005	.022	1.096	mg/L	106.9	70	130	0.55	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.05203	mg/L	104.1	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0003	0.0003			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04794	mg/L	95.8	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	.0005	.05036	mg/L	99.6	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	.0005	.05157	mg/L	102	70	130	2.37	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	.0024	.05376	mg/L	102.6	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	.0024	.05273	mg/L	100.6	70	130	1.93	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.05291	mg/L	105.8	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0003	0.0003			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00022	0.00022			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.05129	mg/L	102.5	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	U	.05303	mg/L	106	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	U	.05325	mg/L	106.4	70	130	0.41	20	

SPF Water Engineering

ACZ Project ID: ***L20544***

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371694													
WG371694ICV	ICV	09/24/14 3:31	MS140723-1	.05		.04766	mg/L	95.3	90	110			
WG371694ICB	ICB	09/24/14 3:34				U	mg/L		-0.0006	0.0006			
WG371694LFB	LFB	09/24/14 3:37	MS140904-3	.05005		.04655	mg/L	93	85	115			
L20524-02AS	AS	09/24/14 3:47	MS140904-3	.05005	U	.04808	mg/L	96.1	70	130			
L20524-02ASD	ASD	09/24/14 3:50	MS140904-3	.05005	U	.04869	mg/L	97.3	70	130	1.26	20	
L20544-04AS	AS	09/24/14 4:28	MS140904-3	.05005	.0089	.05371	mg/L	89.5	70	130			
L20544-04ASD	ASD	09/24/14 4:31	MS140904-3	.05005	.0089	.05435	mg/L	90.8	70	130	1.18	20	
WG371766													
WG371766ICV	ICV	09/26/14 2:39	MS140723-1	.05		.04695	mg/L	93.9	90	110			
WG371766ICB	ICB	09/26/14 2:42				U	mg/L		-0.0006	0.0006			
WG371766LFB	LFB	09/26/14 2:45	MS140904-3	.05005		.05045	mg/L	100.8	85	115			
L20573-02AS	AS	09/26/14 4:00	MS140904-3	.05005	U	.05238	mg/L	104.7	70	130			
L20573-02ASD	ASD	09/26/14 4:04	MS140904-3	.05005	U	.04817	mg/L	96.2	70	130	8.37	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371847													
WG371847ICV	ICV	09/25/14 21:55	MS140723-1	.05		.04957	mg/L	99.1	90	110			
WG371847ICB	ICB	09/25/14 21:58				U	mg/L		-0.0006	0.0006			
WG371702LRB	LRB	09/25/14 22:02				U	mg/L		-0.00044	0.00044			
WG371702LFB	LFB	09/25/14 22:05	MS140904-3	.05005		.04973	mg/L	99.4	85	115			
L20573-02LFM	LFM	09/25/14 23:25	MS140904-3	.05005	.0003	.05244	mg/L	104.2	70	130			
L20573-02LFMD	LFMD	09/25/14 23:29	MS140904-3	.05005	.0003	.05096	mg/L	101.2	70	130	2.86	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.961	mg/L	98.1	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.03	0.03			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.52	mg/L	103.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	.03	.539	mg/L	101.7	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	.03	.532	mg/L	100.3	85	115	1.31	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.979	mg/L	99	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.03	0.03			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.022	0.022			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.537	mg/L	107.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	U	.544	mg/L	108.7	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	U	.537	mg/L	107.3	70	130	1.3	20	

SPF Water Engineering ACZ Project ID: ***L20544***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20544-01	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371381	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371847	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371766	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
	WG371612	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371405	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371751	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371523	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371405	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering ACZ Project ID: ***L20544***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20544-02	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371381	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371847	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371766	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
	WG371612	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371751	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20544***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20544-03	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371694	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG371381	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371766	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371847	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371612	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371405	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371751	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371894	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371523	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371405	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering

ACZ Project ID: ***L20544***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20544-04	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371381	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371847	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371612	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371751	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371894	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371324	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20544
Date Received: 09/16/2014 11:43
Received By: mtb
Date Printed: 9/17/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20413	0.7	10	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20544

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 3rd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
PW-4	9/11/14 10:21	GW	8	X							
GW-4	9/11/14 11:03	GW	8	X							
59766	9/11/14 11:53	GW	8	X							
PW-1	9/11/14 14:05	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	9-15-14 7:00	MPL	9-16-14 1140

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20544 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

REPAD.09.06.05.01 S/ m D/ ## P/

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 01, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20545

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 16, 2014. This project has been assigned to ACZ's project number, L20545. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20545. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 31, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 01, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20545

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on September 16, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20545. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved Cobalt values exceed the corresponding total values for project L20545. In some cases, RPDs between dissolved and total values exceed the standard acceptance limit of 20%. Samples were re-analyzed for verification, and results for both parameters were confirmed. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling issue.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L20545-01***
Date Sampled: *09/11/14 14:34*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 11:07	mss2
Cyanide, WAD	SM4500-CN I- distillation		-						09/23/14 14:03	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 22:26	mss2
Total Hot Plate Digestion	M200.2 ICP								09/23/14 12:27	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/23/14 11:01	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L20545-01***
Date Sampled: *09/11/14 14:34*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/19/14 0:18	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/24/14 21:40	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	09/24/14 12:38	las
Antimony, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0004	0.002	09/25/14 0:59	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0304		*	mg/L	0.0002	0.001	09/24/14 12:38	las
Arsenic, total	M200.8 ICP-MS	1	0.0268			mg/L	0.0002	0.001	09/25/14 0:59	pmc
Barium, dissolved	M200.7 ICP	1	0.030			mg/L	0.003	0.02	09/19/14 0:18	jjc
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	09/24/14 21:40	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 12:38	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 0:59	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:18	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:40	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/19/14 0:18	jjc
Boron, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	09/24/14 21:40	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:38	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 0:59	pmc
Calcium, dissolved	M200.7 ICP	1	44.4			mg/L	0.1	0.5	09/19/14 0:18	jjc
Calcium, total	M200.7 ICP	1	46.3			mg/L	0.1	0.5	09/24/14 21:40	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/24/14 12:38	las
Chromium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/25/14 0:59	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00041			mg/L	0.00005	0.0003	09/24/14 12:38	las
Cobalt, total	M200.8 ICP-MS	1	0.00017	B		mg/L	0.00005	0.0003	09/25/14 0:59	pmc
Copper, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	09/24/14 12:38	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 0:59	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:18	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:40	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/19/14 0:18	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/24/14 21:40	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:38	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 0:59	pmc
Lithium, dissolved	M200.7 ICP	1	0.044			mg/L	0.008	0.04	09/19/14 0:18	jjc
Lithium, total	M200.7 ICP	1	0.044			mg/L	0.008	0.04	09/24/14 21:40	aeb
Magnesium, dissolved	M200.7 ICP	1	8.4			mg/L	0.2	1	09/19/14 0:18	jjc
Magnesium, total	M200.7 ICP	1	8.9			mg/L	0.2	1	09/24/14 21:40	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 12:38	las
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 0:59	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 9:39	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/23/14 12:11	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0041			mg/L	0.0005	0.003	09/24/14 12:38	las
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	09/25/14 0:59	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0006	0.003	09/24/14 12:38	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/25/14 0:59	pmc
Potassium, dissolved	M200.7 ICP	1	6.1			mg/L	0.2	1	09/19/14 0:18	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L20545-01***
Date Sampled: *09/11/14 14:34*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.4			mg/L	0.2	1	09/24/14 21:40	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:18	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:40	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0003	09/26/14 12:41	las
Selenium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0003	09/25/14 0:59	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/26/14 12:41	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 0:59	pmc
Sodium, dissolved	M200.7 ICP	1	25.9			mg/L	0.2	1	09/19/14 0:18	jjc
Sodium, total	M200.7 ICP	1	26.8			mg/L	0.2	1	09/24/14 21:40	aeb
Strontium, dissolved	M200.7 ICP	1	0.206			mg/L	0.005	0.03	09/19/14 0:18	jjc
Strontium, total	M200.7 ICP	1	0.210			mg/L	0.005	0.03	09/24/14 21:40	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:38	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 0:59	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 12:38	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/25/14 0:59	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:18	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 21:40	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0038			mg/L	0.0001	0.0005	09/24/14 12:38	las
Uranium, total	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0005	09/25/14 0:59	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0169		*	mg/L	0.0002	0.001	09/24/14 12:38	las
Vanadium, total	M200.8 ICP-MS	1	0.0182			mg/L	0.0002	0.001	09/25/14 0:59	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:18	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:40	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: GW-1

ACZ Sample ID: ***L20545-01***
Date Sampled: *09/11/14 14:34*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	156			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	156			mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	11.3		*	mg/L	0.5	2.5	09/24/14 3:52	tcd
Conductivity @25C	SM2510B	1	412			umhos/cm	1	10	09/18/14 21:35	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:59	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:41	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.46		*	mg/L	0.05	0.25	09/25/14 2:18	jlf
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	0.8	4	10/01/14 8:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.04			mg/L	0.02	0.1	09/25/14 0:11	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/23/14 17:42	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.0			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/25/14 22:38	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290			mg/L	10	20	09/17/14 14:01	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/17/14 16:44	eaa
Sulfate	M300.0 - Ion Chromatography	1	32.1			mg/L	0.5	2.5	09/25/14 2:18	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L20545-02***
Date Sampled: *09/11/14 15:39*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 11:30	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 14:12	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 23:07	mss2
Total Hot Plate Digestion	M200.2 ICP								09/23/14 12:39	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/23/14 11:12	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L20545-02***
Date Sampled: *09/11/14 15:39*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/19/14 0:22	jjc
Aluminum, total	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/24/14 21:43	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	09/24/14 12:41	las
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	09/25/14 1:03	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0381		*	mg/L	0.0002	0.001	09/24/14 12:41	las
Arsenic, total	M200.8 ICP-MS	1	0.0352			mg/L	0.0002	0.001	09/25/14 1:03	pmc
Barium, dissolved	M200.7 ICP	1	0.028			mg/L	0.003	0.02	09/19/14 0:22	jjc
Barium, total	M200.7 ICP	1	0.026			mg/L	0.003	0.02	09/24/14 21:43	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 12:41	las
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 1:03	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:22	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:43	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/19/14 0:22	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/24/14 21:43	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:41	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 1:03	pmc
Calcium, dissolved	M200.7 ICP	1	38.8			mg/L	0.1	0.5	09/19/14 0:22	jjc
Calcium, total	M200.7 ICP	1	39.9			mg/L	0.1	0.5	09/24/14 21:43	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/24/14 12:41	las
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	09/25/14 1:03	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00026	B		mg/L	0.00005	0.0003	09/24/14 12:41	las
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	09/25/14 1:03	pmc
Copper, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	09/24/14 12:41	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 1:03	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:22	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:43	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/19/14 0:22	jjc
Iron, total	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/24/14 21:43	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:41	las
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 1:03	pmc
Lithium, dissolved	M200.7 ICP	1	0.042			mg/L	0.008	0.04	09/19/14 0:22	jjc
Lithium, total	M200.7 ICP	1	0.039	B		mg/L	0.008	0.04	09/24/14 21:43	aeb
Magnesium, dissolved	M200.7 ICP	1	7.1			mg/L	0.2	1	09/19/14 0:22	jjc
Magnesium, total	M200.7 ICP	1	7.2			mg/L	0.2	1	09/24/14 21:43	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 12:41	las
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/25/14 1:03	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 9:54	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/23/14 12:16	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0041			mg/L	0.0005	0.003	09/24/14 12:41	las
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	09/25/14 1:03	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0006	0.003	09/24/14 12:41	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/25/14 1:03	pmc
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.2	1	09/19/14 0:22	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L20545-02***
Date Sampled: *09/11/14 15:39*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.2			mg/L	0.2	1	09/24/14 21:43	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:22	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:43	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0003	09/26/14 12:51	las
Selenium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0003	09/25/14 1:03	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/26/14 12:51	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 1:03	pmc
Sodium, dissolved	M200.7 ICP	1	25.4			mg/L	0.2	1	09/19/14 0:22	jjc
Sodium, total	M200.7 ICP	1	25.9			mg/L	0.2	1	09/24/14 21:43	aeb
Strontium, dissolved	M200.7 ICP	1	0.199			mg/L	0.005	0.03	09/19/14 0:22	jjc
Strontium, total	M200.7 ICP	1	0.201			mg/L	0.005	0.03	09/24/14 21:43	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:41	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 1:03	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 12:41	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/25/14 1:03	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:22	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 21:43	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	09/24/14 12:41	las
Uranium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0005	09/25/14 1:03	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0164		*	mg/L	0.0002	0.001	09/24/14 12:41	las
Vanadium, total	M200.8 ICP-MS	1	0.0184			mg/L	0.0002	0.001	09/25/14 1:03	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:22	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:43	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59772

ACZ Sample ID: ***L20545-02***
Date Sampled: *09/11/14 15:39*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	144			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	144			mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	9.96		*	mg/L	0.5	2.5	09/24/14 4:10	tcd
Conductivity @25C	SM2510B	1	374			umhos/cm	1	10	09/18/14 21:46	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 17:01	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:42	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.46		*	mg/L	0.05	0.25	09/25/14 2:36	jlf
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	0.8	4	10/01/14 8:43	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.11			mg/L	0.02	0.1	09/25/14 0:12	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/23/14 17:43	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	19.2			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	09/25/14 22:39	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	09/17/14 16:32	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/17/14 16:46	eaa
Sulfate	M300.0 - Ion Chromatography	1	34.3			mg/L	0.5	2.5	09/25/14 2:36	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L20545-03***
Date Sampled: *09/11/14 17:00*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/24/14 11:53	mss2
Cyanide, WAD	SM4500-CN I- distillation								09/23/14 14:21	bsu
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/24/14 23:48	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/23/14 11:23	las
Total Hot Plate Digestion	M200.2 ICP								09/23/14 12:50	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L20545-03***
Date Sampled: *09/11/14 17:00*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/19/14 0:31	jjc
Aluminum, total	M200.7 ICP	1	0.74		*	mg/L	0.03	0.2	09/24/14 21:46	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	09/24/14 12:44	las
Antimony, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	09/25/14 1:06	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0271		*	mg/L	0.0002	0.001	09/24/14 12:44	las
Arsenic, total	M200.8 ICP-MS	1	0.0258			mg/L	0.0002	0.001	09/25/14 1:06	pmc
Barium, dissolved	M200.7 ICP	1	0.051			mg/L	0.003	0.02	09/19/14 0:31	jjc
Barium, total	M200.7 ICP	1	0.054			mg/L	0.003	0.02	09/24/14 21:46	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/24/14 12:44	las
Beryllium, total	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	09/25/14 1:06	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/19/14 0:31	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 21:46	aeb
Boron, dissolved	M200.7 ICP	1	0.08			mg/L	0.01	0.05	09/19/14 0:31	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/24/14 21:46	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:44	las
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 1:06	pmc
Calcium, dissolved	M200.7 ICP	1	39.4			mg/L	0.1	0.5	09/19/14 0:31	jjc
Calcium, total	M200.7 ICP	1	41.6			mg/L	0.1	0.5	09/24/14 21:46	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	09/24/14 12:44	las
Chromium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	09/25/14 1:06	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00033			mg/L	0.00005	0.0003	09/24/14 12:44	las
Cobalt, total	M200.8 ICP-MS	1	0.00071			mg/L	0.00005	0.0003	09/25/14 1:06	pmc
Copper, dissolved	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	09/26/14 12:54	las
Copper, total	M200.8 ICP-MS	1	0.0075			mg/L	0.0005	0.003	09/25/14 1:06	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:31	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:46	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/19/14 0:31	jjc
Iron, total	M200.7 ICP	1	0.37		*	mg/L	0.02	0.05	09/24/14 21:46	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:44	las
Lead, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	09/25/14 1:06	pmc
Lithium, dissolved	M200.7 ICP	1	0.050			mg/L	0.008	0.04	09/19/14 0:31	jjc
Lithium, total	M200.7 ICP	1	0.049			mg/L	0.008	0.04	09/24/14 21:46	aeb
Magnesium, dissolved	M200.7 ICP	1	6.6			mg/L	0.2	1	09/19/14 0:31	jjc
Magnesium, total	M200.7 ICP	1	7.1			mg/L	0.2	1	09/24/14 21:46	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/24/14 12:44	las
Manganese, total	M200.8 ICP-MS	1	0.0273			mg/L	0.0005	0.003	09/25/14 1:06	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 9:59	las
Mercury, total	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	09/23/14 12:31	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0031			mg/L	0.0005	0.003	09/24/14 12:44	las
Molybdenum, total	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	09/25/14 1:06	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0006	0.003	09/24/14 12:44	las
Nickel, total	M200.8 ICP-MS	1	0.0010	B		mg/L	0.0006	0.003	09/25/14 1:06	pmc
Potassium, dissolved	M200.7 ICP	1	7.2			mg/L	0.2	1	09/19/14 0:31	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L20545-03***
Date Sampled: *09/11/14 17:00*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7.5			mg/L	0.2	1	09/24/14 21:46	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/19/14 0:31	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 21:46	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	09/26/14 12:54	las
Selenium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0003	09/25/14 1:06	pmc
Silver, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/26/14 12:54	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/25/14 1:06	pmc
Sodium, dissolved	M200.7 ICP	1	25.1			mg/L	0.2	1	09/19/14 0:31	jjc
Sodium, total	M200.7 ICP	1	25.8			mg/L	0.2	1	09/24/14 21:46	aeb
Strontium, dissolved	M200.7 ICP	1	0.245			mg/L	0.005	0.03	09/19/14 0:31	jjc
Strontium, total	M200.7 ICP	1	0.253			mg/L	0.005	0.03	09/24/14 21:46	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/24/14 12:44	las
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/25/14 1:06	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/24/14 12:44	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/25/14 1:06	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/19/14 0:31	jjc
Titanium, total	M200.7 ICP	1	0.010	B		mg/L	0.005	0.03	09/24/14 21:46	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	09/24/14 12:44	las
Uranium, total	M200.8 ICP-MS	1	0.0028			mg/L	0.0001	0.0005	09/25/14 1:06	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0133		*	mg/L	0.0002	0.001	09/24/14 12:44	las
Vanadium, total	M200.8 ICP-MS	1	0.0160			mg/L	0.0002	0.001	09/25/14 1:06	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/19/14 0:31	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 21:46	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59760

ACZ Sample ID: ***L20545-03***
Date Sampled: *09/11/14 17:00*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	146			mg/L	2	20	09/18/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/18/14 0:00	id
Total Alkalinity		1	146			mg/L	2	20	09/18/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	8.73		*	mg/L	0.5	2.5	09/25/14 2:54	jlf
Conductivity @25C	SM2510B	1	374			umhos/cm	1	10	09/18/14 21:54	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 17:03	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/24/14 16:43	mpb
Fluoride	M300.0 - Ion Chromatography	1	0.50		*	mg/L	0.05	0.25	09/25/14 2:54	jlf
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	0.8	4	10/01/14 8:43	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.75			mg/L	0.02	0.1	09/25/14 0:13	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/23/14 17:44	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/20/14 0:00	ied
pH measured at		1	18.9			C	0.1	0.1	09/20/14 0:00	ied
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/25/14 22:43	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	09/17/14 16:35	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	25		*	mg/L	5	20	09/17/14 16:47	eaa
Sulfate	M300.0 - Ion Chromatography	1	28.1			mg/L	0.5	2.5	09/25/14 2:54	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L20545-04***
Date Sampled: *09/11/14 15:45*
Date Received: *09/16/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/23/14 12:36	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20545***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371405													
WG371405PBW1	PBW	09/18/14 16:53				U	mg/L		-20	20			
WG371405LCSW3	LCSW	09/18/14 17:11	WC140910-	820.0001		800	mg/L	97.6	90	110			
WG371405LCSW6	LCSW	09/18/14 20:18	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371405PBW2	PBW	09/18/14 20:25				U	mg/L		-20	20			
L20545-03DUP	DUP	09/18/14 22:03			146	147	mg/L				0.7	20	
WG371405LCSW9	LCSW	09/18/14 23:39	WC140910-	820.0001		799	mg/L	97.4	90	110			
WG371405PBW3	PBW	09/18/14 23:46				U	mg/L		-20	20			
WG371405LCSW12	LCSW	09/19/14 2:59	WC140910-	820.0001		831	mg/L	101.3	90	110			
WG371405PBW4	PBW	09/19/14 3:05				U	mg/L		-20	20			
WG371405LCSW15	LCSW	09/19/14 12:32	WC140910-	820.0001		822	mg/L	100.2	90	110			
WG371405PBW5	PBW	09/19/14 12:39				U	mg/L		-20	20			
WG371405LCSW18	LCSW	09/19/14 14:32	WC140910-	820.0001		824	mg/L	100.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.039	mg/L	102	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.09	0.09			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0015		1.087	mg/L	108.5	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0015	U	1.126	mg/L	112.4	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0015	U	1.129	mg/L	112.7	85	115	0.27	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.0015	U	1.081	mg/L	107.9	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.0015	U	1.073	mg/L	107.1	85	115	0.74	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.027	mg/L	101.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.09	0.09			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.066	0.066			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0015		1.09	mg/L	108.8	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0015	4.7	12.81	mg/L	809.8	70	130			M3
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0015	4.7	12.43	mg/L	771.8	70	130	3.01	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.02002		.02101	mg/L	104.9	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0012	0.0012			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.01		.01034	mg/L	103.4	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.01	U	.00992	mg/L	99.2	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.01	U	.00974	mg/L	97.4	70	130	1.83	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.02002		.02087	mg/L	104.2	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0012	0.0012			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00088	0.00088			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.01		.01003	mg/L	100.3	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.01	.0005	.01022	mg/L	97.2	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.01	.0005	.01039	mg/L	98.9	70	130	1.65	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05108	mg/L	102.2	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0006	0.0006			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.0501		.04963	mg/L	99.1	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.0501	.0002	.05601	mg/L	111.4	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.0501	.0002	.05782	mg/L	115	70	130	3.18	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.0539	mg/L	107.8	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0006	0.0006			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00044	0.00044			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.0501		.04998	mg/L	99.8	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.0501	.0002	.05044	mg/L	100.3	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.0501	.0002	.04884	mg/L	97.1	70	130	3.22	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.995	mg/L	99.8	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.009	0.009			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5		.5108	mg/L	102.2	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5	.026	.5393	mg/L	102.7	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5	.026	.5369	mg/L	102.2	85	115	0.45	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	.5	.028	.5367	mg/L	101.7	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	.5	.028	.5313	mg/L	100.7	85	115	1.01	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.993	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.009	0.009			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.0066	0.0066			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5		.5215	mg/L	104.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5	.01	.5316	mg/L	104.3	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5	.01	.531	mg/L	104.2	70	130	0.11	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.0483	mg/L	96.6	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.00015	0.00015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.04746	mg/L	94.8	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	U	.04924	mg/L	98.4	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	U	.04831	mg/L	96.5	70	130	1.91	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.04997	mg/L	99.9	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.00015	0.00015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00011	0.00011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04832	mg/L	96.5	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	U	.05107	mg/L	102	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	U	.05112	mg/L	102.1	70	130	0.1	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.048	mg/L	102.4	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.12	0.12			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.999		1.029	mg/L	103	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.999	U	1.078	mg/L	107.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.999	U	1.062	mg/L	106.3	85	115	1.5	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	.999	U	1.032	mg/L	103.3	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	.999	U	1.018	mg/L	101.9	85	115	1.37	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.016	mg/L	100.8	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.12	0.12			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.088	0.088			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.999		1.069	mg/L	107	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.999	U	1.08	mg/L	108.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.999	U	1.073	mg/L	107.4	70	130	0.65	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.061	mg/L	103.1	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.03	0.03			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.534	mg/L	106.7	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	.01	.552	mg/L	108.3	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	.01	.545	mg/L	106.9	85	115	1.28	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	.5005	.07	.602	mg/L	106.3	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	.5005	.07	.589	mg/L	103.7	85	115	2.18	20	

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ACZ Project ID: ***L20545***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.048	mg/L	102.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.03	0.03			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.022	0.022			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.523	mg/L	104.5	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	.13	.651	mg/L	104.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	.13	.643	mg/L	102.5	70	130	1.24	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.0509	mg/L	101.8	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0003	0.0003			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.0501		.05115	mg/L	102.1	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.0501	U	.05019	mg/L	100.2	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.0501	U	.04814	mg/L	96.1	70	130	4.17	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.04982	mg/L	99.6	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.0501		.04745	mg/L	94.7	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.0501	U	.04609	mg/L	92	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.0501	U	.04743	mg/L	94.7	70	130	2.87	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		100.24	mg/L	100.2	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	67.99189		71.26	mg/L	104.8	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	67.99189	217	281.7	mg/L	95.2	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	67.99189	217	282.6	mg/L	96.5	85	115	0.32	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	67.99189	38.8	109.6	mg/L	104.1	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	67.99189	38.8	109	mg/L	103.2	85	115	0.55	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		99.74	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				.1	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	67.99189		73.61	mg/L	108.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	67.99189	10.6	84.31	mg/L	108.4	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	67.99189	10.6	83.52	mg/L	107.2	70	130	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	19.94		19.1	mg/L	95.8	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371612													
WG371612LFB1	LFB	09/23/14 15:20	WI140610-6	30		30.5	mg/L	101.7	90	110			
L20535-01DUP	DUP	09/24/14 0:35			U	U	mg/L				0	20	RA
L20535-02AS	AS	09/24/14 1:47	WI140610-6	150	U	195	mg/L	130	90	110			M1
WG371612LFB2	LFB	09/24/14 11:58	WI140610-6	30		30.2	mg/L	100.7	90	110			
WG371757													
WG371757LFB1	LFB	09/24/14 18:32	WI140610-6	30		31	mg/L	103.3	90	110			
L20535-02DUP	DUP	09/24/14 23:19			U	U	mg/L				0	20	RA
L20535-03AS	AS	09/24/14 23:55	WI140610-6	150	U	157	mg/L	104.7	90	110			
WG371757LFB2	LFB	09/25/14 3:12	WI140610-6	30		31.2	mg/L	104	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.04914	mg/L	98.3	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0015	0.0015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.04874	mg/L	97.4	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	U	.04749	mg/L	94.9	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	U	.04887	mg/L	97.6	70	130	2.86	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05106	mg/L	102.1	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0015	0.0015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.0011	0.0011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04759	mg/L	95.1	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	.0061	.05532	mg/L	98.3	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	.0061	.05441	mg/L	96.5	70	130	1.66	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05346	mg/L	106.9	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.00015	0.00015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.05172	mg/L	103.3	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	.00007	.05143	mg/L	102.6	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	.00007	.04886	mg/L	97.5	70	130	5.13	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05217	mg/L	104.3	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.00015	0.00015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00011	0.00011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04936	mg/L	98.6	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	U	.04853	mg/L	97	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	U	.04951	mg/L	98.9	70	130	2	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371405													
WG371405LCSW2	LCSW	09/18/14 16:57	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371405LCSW5	LCSW	09/18/14 20:05	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20545-03DUP	DUP	09/18/14 22:03			374	372	umhos/cm				0.5	20	
WG371405LCSW8	LCSW	09/18/14 23:27	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371405LCSW11	LCSW	09/19/14 2:46	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371405LCSW14	LCSW	09/19/14 12:18	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371405LCSW17	LCSW	09/19/14 14:19	PCN45704	1409		1440	umhos/cm	102.2	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.04868	mg/L	97.4	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0015	0.0015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05		.04691	mg/L	93.8	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05	U	.04164	mg/L	83.3	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05	U	.04229	mg/L	84.6	70	130	1.55	20	
WG371791													
WG371791ICV	ICV	09/26/14 12:32	MS140723-1	.05		.04727	mg/L	94.5	90	110			
WG371791ICB	ICB	09/26/14 12:35				U	mg/L		-0.0015	0.0015			
WG371791LFB	LFB	09/26/14 12:38	MS140904-3	.05		.04631	mg/L	92.6	85	115			
L20545-01AS	AS	09/26/14 12:44	MS140904-3	.05	U	.04483	mg/L	89.7	70	130			
L20545-01ASD	ASD	09/26/14 12:48	MS140904-3	.05	U	.04493	mg/L	89.9	70	130	0.22	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05043	mg/L	100.9	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0015	0.0015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.0011	0.0011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05		.04685	mg/L	93.7	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05	U	.04924	mg/L	98.5	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05	U	.04739	mg/L	94.8	70	130	3.83	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371751													
WG371751ICV	ICV	09/24/14 15:34	WI140918-1	.3		.2852	mg/L	95.1	90	110			
WG371751ICB	ICB	09/24/14 15:35				U	mg/L		-0.003	0.003			
WG371758													
WG371730LRB	LRB	09/24/14 16:58				U	mg/L		-0.003	0.003			
WG371730LFB	LFB	09/24/14 16:59	WI140918-4	.2		.215	mg/L	107.5	90	110			
L20545-01LFM	LFM	09/24/14 17:00	WI140918-4	.2	U	.2115	mg/L	105.8	90	110			
L20545-02DUP	DUP	09/24/14 17:02			U	U	mg/L				0	20	RA

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371751													
WG371751ICV	ICV	09/24/14 15:34	WI140918-1	.3		.2852	mg/L	95.1	90	110			
WG371751ICB	ICB	09/24/14 15:35				U	mg/L		-0.003	0.003			
WG371756													
WG371647LRB	LRB	09/24/14 16:24				U	mg/L		-0.003	0.003			
WG371647LFB	LFB	09/24/14 16:25	WI140918-6	.2		.1867	mg/L	93.4	90	110			
L20659-02LFM	LFM	09/24/14 16:49	WI140918-6	.2	U	.189	mg/L	94.5	90	110			
L20659-02DUP	DUP	09/24/14 16:50			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	4.02		3.76	mg/L	93.5	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-0.15	0.15			
WG371757													
WG371757LFB1	LFB	09/24/14 18:32	WI140610-6	1.5		1.65	mg/L	110	90	110			
L20535-02DUP	DUP	09/24/14 23:19			U	U	mg/L				0	20	RA
L20535-03AS	AS	09/24/14 23:55	WI140610-6	7.5	U	7.98	mg/L	106.4	90	110			
WG371757LFB2	LFB	09/25/14 3:12	WI140610-6	1.5		1.57	mg/L	104.7	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.09	mg/L	104.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.001		1.05	mg/L	104.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.001	U	1.1	mg/L	109.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.001	U	1.08	mg/L	107.9	85	115	1.83	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.001	U	1.03	mg/L	102.9	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.001	U	1.05	mg/L	104.9	85	115	1.92	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.1	mg/L	105	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.001		1.11	mg/L	110.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.001	U	1.08	mg/L	107.9	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.001	U	1.08	mg/L	107.9	70	130	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.991	mg/L	99.6	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.06	0.06			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0014		1.042	mg/L	104.1	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0014	27.4	27.12	mg/L	-28	85	115			M3
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0014	27.4	27.09	mg/L	-31	85	115	0.11	20	M3
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.0014	U	1.032	mg/L	103.1	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.0014	U	1.024	mg/L	102.3	85	115	0.78	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.99	mg/L	99.5	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.06	0.06			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.044	0.044			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0014		1.124	mg/L	112.2	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0014	4.85	7.574	mg/L	272	70	130			M3
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0014	4.85	7.393	mg/L	253.9	70	130	2.42	20	M3

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05264	mg/L	105.3	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0003	0.0003			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.05089	mg/L	101.7	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	U	.058	mg/L	115.9	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	U	.05792	mg/L	115.7	70	130	0.14	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.0518	mg/L	103.6	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04851	mg/L	96.9	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	.0002	.04703	mg/L	93.6	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	.0002	.04832	mg/L	96.1	70	130	2.71	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.0302	mg/L	101.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.024	0.024			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.002		1.024	mg/L	102.2	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.002	.042	1.087	mg/L	104.3	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.002	.042	1.078	mg/L	103.4	85	115	0.83	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.002	.042	1.056	mg/L	101.2	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.002	.042	1.045	mg/L	100.1	85	115	1.05	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.0335	mg/L	101.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.024	0.024			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.0176	0.0176			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.002		1.066	mg/L	106.4	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.002	.091	1.154	mg/L	106.1	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.002	.091	1.158	mg/L	106.5	70	130	0.35	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		98.03	mg/L	98	95	105			
WG371381ICB	ICB	09/18/14 23:23				.24	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	50.00283		50.01	mg/L	100	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	50.00283	29.6	80.21	mg/L	101.2	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	50.00283	29.6	79.93	mg/L	100.7	85	115	0.35	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	50.00283	7.1	56.73	mg/L	99.3	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	50.00283	7.1	56.37	mg/L	98.5	85	115	0.64	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		97.32	mg/L	97.3	95	105			
WG371723ICB	ICB	09/24/14 20:47				.32	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				.28	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	50.00283		51.31	mg/L	102.6	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	50.00283	1.4	53.17	mg/L	103.5	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	50.00283	1.4	52.62	mg/L	102.4	70	130	1.04	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05241	mg/L	104.8	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0015	0.0015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.0501		.05138	mg/L	102.6	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.0501	.0216	.07154	mg/L	99.7	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.0501	.0216	.06876	mg/L	94.1	70	130	3.96	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.0521	mg/L	104.2	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0015	0.0015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.0011	0.0011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.0501		.0502	mg/L	100.2	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.0501	.0015	.05165	mg/L	100.1	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.0501	.0015	.05244	mg/L	101.7	70	130	1.52	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
L20545-01MS	MS	09/30/14 9:44	HG140929-6	2	.3	2.27	ng/L	98.5	71	125			
L20545-01MSD	MSD	09/30/14 9:49	HG140929-6	2	.3	2.32	ng/L	101	71	125	2.18	24	
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371390													
WG371390ICV	ICV	09/18/14 13:25	HG140819-3	10		10.1	ng/L	101	79	121			
WG371390ICB	ICB	09/18/14 13:30				U	ng/L		-0.5	0.5			
WG371613													
WG371613CCV1	CCV	09/23/14 11:20	HG140819-3	10		9.69	ng/L	96.9	76.5	123.4			
WG371613CCB1	CCB	09/23/14 11:25				U	ng/L		-0.5	0.5			
WG371613PQV	PQV	09/23/14 11:30	HG140819-4	.5		.48	ng/L	96	70	130			
WG371613LFB	LFB	09/23/14 11:35	HG140819-5	2		1.91	ng/L	95.5	71	125			
L20544-01MS	MS	09/23/14 11:46	HG2XPREP	8	7.1	10.86	ng/L	94	71	125			
L20544-01MSD	MSD	09/23/14 11:51	HG2XPREP	8	7.1	10.92	ng/L	95.5	71	125	0.55	24	
WG371613CCV2	CCV	09/23/14 12:21	HG140819-3	10		9.59	ng/L	95.9	76.5	123.4			
WG371613CCB2	CCB	09/23/14 12:26				U	ng/L		-0.5	0.5			
WG371613CCV3	CCV	09/23/14 13:17	HG140819-3	10		9.53	ng/L	95.3	76.5	123.4			
WG371613CCB3	CCB	09/23/14 13:22				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20545***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.01998		.01971	mg/L	98.6	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0015	0.0015			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.0502		.0507	mg/L	101	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.0502	.001	.05297	mg/L	103.5	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.0502	.001	.05199	mg/L	101.6	70	130	1.87	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.01998		.01916	mg/L	95.9	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0015	0.0015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.0011	0.0011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.0502		.04762	mg/L	94.9	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.0502	U	.04686	mg/L	93.3	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.0502	U	.04889	mg/L	97.4	70	130	4.24	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05111	mg/L	102.2	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0018	0.0018			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05		.04992	mg/L	99.8	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05	U	.04674	mg/L	93.5	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05	U	.04745	mg/L	94.9	70	130	1.51	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05271	mg/L	105.4	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0018	0.0018			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00132	0.00132			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05		.04819	mg/L	96.4	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05	.0022	.05081	mg/L	97.2	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05	.0022	.0493	mg/L	94.2	70	130	3.02	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371762													
WG371762ICV	ICV	09/24/14 20:53	WI140718-9	2.416		2.256	mg/L	93.4	90	110			
WG371762ICB	ICB	09/24/14 20:54				U	mg/L		-0.06	0.06			
WG371769													
WG371769LFB	LFB	09/24/14 23:49	WI140719-4	2		1.97	mg/L	98.5	90	110			
L20544-03AS	AS	09/25/14 0:07	WI140719-4	2	U	1.989	mg/L	99.5	90	110			
L20544-04DUP	DUP	09/25/14 0:10			.62	.621	mg/L				0.2	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371667													
L20512-02AS	AS	09/23/14 17:36	WI140113-8	1	U	.836	mg/L	83.6	90	110			M2
L20512-03DUP	DUP	09/23/14 17:38			.1	.112	mg/L				11.3	20	RA
WG371667LFB1	LFB	09/23/14 18:04	WI140113-8	1		.949	mg/L	94.9	90	110			
WG371667LFB2	LFB	09/23/14 18:05	WI140113-8	1		.951	mg/L	95.1	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371523													
WG371523LCSW1	LCSW	09/20/14 12:06	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20545-03DUP	DUP	09/20/14 13:15			8.2	8.2	units				0	20	
WG371523LCSW3	LCSW	09/20/14 14:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371523LCSW5	LCSW	09/20/14 17:39	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371523LCSW7	LCSW	09/20/14 18:18	PCN45660	5.99		6	units	100.2	5.99	6.01			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371852													
WG371852ICV	ICV	09/25/14 22:25	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG371852ICB	ICB	09/25/14 22:28				U	mg/L		-0.03	0.03			
WG371759LRB	LRB	09/25/14 22:29				U	mg/L		-0.03	0.03			
WG371759LFB	LFB	09/25/14 22:30	WI140918-1	.5		.475	mg/L	95	90	110			
L20544-01LFM	LFM	09/25/14 22:32	WI140918-1	.5	.04	.512	mg/L	94.4	90	110			
L20544-02DUP	DUP	09/25/14 22:35			.02	.018	mg/L				10.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	20		19.94	mg/L	99.7	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	98.07852		100.8	mg/L	102.8	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	98.07852	7.6	111.6	mg/L	106	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	98.07852	7.6	111.1	mg/L	105.5	85	115	0.45	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	98.07852	6	106.3	mg/L	102.3	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	98.07852	6	105.6	mg/L	101.6	85	115	0.66	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	20		19.93	mg/L	99.7	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	98.07852		102.6	mg/L	104.6	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	98.07852	1.2	103	mg/L	103.8	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	98.07852	1.2	102.9	mg/L	103.7	70	130	0.1	20	

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ACZ Project ID: ***L20545***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371301													
WG371301PBW	PBW	09/17/14 13:23				U	mg/L		-20	20			
WG371301LCSW	LCSW	09/17/14 13:24	PCN46225	260		244	mg/L	93.8	80	120			
L20545-01DUP	DUP	09/17/14 14:02			290	296	mg/L				2	10	
WG371320													
WG371320PBW	PBW	09/17/14 15:38				U	mg/L		-20	20			
WG371320LCSW	LCSW	09/17/14 15:40	PCN46225	260		258	mg/L	99.2	80	120			
L20545-03DUP	DUP	09/17/14 16:38			280	272	mg/L				2.9	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371324													
WG371324PBW	PBW	09/17/14 16:20				U	mg/L		-15	15			
WG371324LCSW	LCSW	09/17/14 16:21	PCN46225	160		148	mg/L	92.5	80	120			
L20553-01DUP	DUP	09/17/14 16:59			U	U	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.03	mg/L	101.5	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.3	0.3			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.0009		1.09	mg/L	108.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.0009	U	1.07	mg/L	106.9	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.0009	U	1.08	mg/L	107.9	85	115	0.93	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.0009	U	1.07	mg/L	106.9	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.02	mg/L	101	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.3	0.3			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.22	0.22			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.0009		1.11	mg/L	110.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.0009	U	1.11	mg/L	110.9	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.0009	U	1.11	mg/L	110.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371791													
WG371791ICV	ICV	09/26/14 12:32	MS140723-1	.05		.04806	mg/L	96.1	90	110			
WG371791ICB	ICB	09/26/14 12:35				U	mg/L		-0.0003	0.0003			
WG371791LFB	LFB	09/26/14 12:38	MS140904-3	.05015		.04946	mg/L	98.6	85	115			
L20545-01AS	AS	09/26/14 12:44	MS140904-3	.05015	.0035	.05942	mg/L	111.5	70	130			
L20545-01ASD	ASD	09/26/14 12:48	MS140904-3	.05015	.0035	.05636	mg/L	105.4	70	130	5.29	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05156	mg/L	103.1	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05015		.04691	mg/L	93.5	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05015	U	.04654	mg/L	92.8	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05015	U	.04579	mg/L	91.3	70	130	1.62	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371791													
WG371791ICV	ICV	09/26/14 12:32	MS140723-1	.02002		.01963	mg/L	98.1	90	110			
WG371791ICB	ICB	09/26/14 12:35				U	mg/L		-0.00015	0.00015			
WG371791LFB	LFB	09/26/14 12:38	MS140904-3	.01002		.009197	mg/L	91.8	85	115			
L20545-01AS	AS	09/26/14 12:44	MS140904-3	.01002	U	.009554	mg/L	95.3	70	130			
L20545-01ASD	ASD	09/26/14 12:48	MS140904-3	.01002	U	.009223	mg/L	92	70	130	3.53	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.02002		.02014	mg/L	100.6	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.00015	0.00015			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00011	0.00011			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.01002		.009485	mg/L	94.7	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.01002	U	.009077	mg/L	90.6	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.01002	U	.009186	mg/L	91.7	70	130	1.19	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	100		99.43	mg/L	99.4	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.6	0.6			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	100.0589		100.8	mg/L	100.7	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	100.0589	21.1	124.8	mg/L	103.6	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	100.0589	21.1	124.6	mg/L	103.4	85	115	0.16	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	100.0589	25.4	125.3	mg/L	99.8	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	100.0589	25.4	124.5	mg/L	99	85	115	0.64	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	100		98.62	mg/L	98.6	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.6	0.6			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.44	0.44			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	100.0589		102	mg/L	101.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	100.0589	173	277.7	mg/L	104.6	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	100.0589	173	274.2	mg/L	101.1	70	130	1.27	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.9808	mg/L	99	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.015	0.015			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.5157	mg/L	103	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	1.76	2.208	mg/L	89.5	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	1.76	2.212	mg/L	90.3	85	115	0.18	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	.5005	.199	.7074	mg/L	101.6	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	.5005	.199	.7033	mg/L	100.8	85	115	0.58	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.9758	mg/L	98.8	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.015	0.015			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.011	0.011			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.5199	mg/L	103.9	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	.051	.5716	mg/L	104	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	.051	.5703	mg/L	103.8	70	130	0.23	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	50.05		46.7	mg/L	93.3	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371757													
WG371757LFB1	LFB	09/24/14 18:32	WI140610-6	30		32.8	mg/L	109.3	90	110			
L20535-02DUP	DUP	09/24/14 23:19			126	126	mg/L				0	20	
L20535-03AS	AS	09/24/14 23:55	WI140610-6	150	201	348	mg/L	98	90	110			
WG371757LFB2	LFB	09/25/14 3:12	WI140610-6	30		30.3	mg/L	101	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05346	mg/L	106.9	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0003	0.0003			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.0502		.05225	mg/L	104.1	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.0502	U	.0595	mg/L	118.5	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.0502	U	.05944	mg/L	118.4	70	130	0.1	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05293	mg/L	105.9	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.0502		.04988	mg/L	99.4	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.0502	U	.04867	mg/L	97	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.0502	U	.04963	mg/L	98.9	70	130	1.95	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.0501		.04952	mg/L	98.8	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0003	0.0003			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.05136	mg/L	102.6	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	U	.05069	mg/L	101.3	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	U	.05063	mg/L	101.2	70	130	0.12	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.0501		.04888	mg/L	97.6	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.05279	mg/L	105.5	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	U	.04858	mg/L	97.1	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	U	.0497	mg/L	99.3	70	130	2.28	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		2.0198	mg/L	101	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.015	0.015			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	1.005		1.03	mg/L	102.5	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	1.005	U	1.036	mg/L	103.1	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	1.005	U	1.034	mg/L	102.9	85	115	0.19	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	1.005	U	1.025	mg/L	102	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	1.005	U	1.022	mg/L	101.7	85	115	0.29	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		2.0285	mg/L	101.4	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.015	0.015			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.011	0.011			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	1.005		1.08	mg/L	107.5	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	1.005	.022	1.102	mg/L	107.5	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	1.005	.022	1.096	mg/L	106.9	70	130	0.55	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.05327	mg/L	106.5	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0003	0.0003			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.05291	mg/L	105.7	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005	.0005	.06194	mg/L	122.8	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005	.0005	.06216	mg/L	123.2	70	130	0.35	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.05183	mg/L	103.7	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0003	0.0003			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00022	0.00022			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04932	mg/L	98.5	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	U	.04799	mg/L	95.9	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	U	.04961	mg/L	99.1	70	130	3.32	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371705													
WG371705ICV	ICV	09/24/14 12:29	MS140723-1	.05		.04724	mg/L	94.5	90	110			
WG371705ICB	ICB	09/24/14 12:32				U	mg/L		-0.0006	0.0006			
WG371705LFB	LFB	09/24/14 12:35	MS140904-3	.05005		.04817	mg/L	96.2	85	115			
L20563-02AS	AS	09/24/14 12:54	MS140904-3	.05005		.04912	mg/L	98.1	70	130			
L20563-02ASD	ASD	09/24/14 12:57	MS140904-3	.05005		.05054	mg/L	101	70	130	2.85	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371764													
WG371764ICV	ICV	09/25/14 0:47	MS140723-1	.05		.04899	mg/L	98	90	110			
WG371764ICB	ICB	09/25/14 0:50				U	mg/L		-0.0006	0.0006			
WG371602LRB	LRB	09/25/14 0:53				U	mg/L		-0.00044	0.00044			
WG371602LFB	LFB	09/25/14 0:56	MS140904-3	.05005		.04675	mg/L	93.4	85	115			
L20553-05LFM	LFM	09/25/14 1:31	MS140904-3	.05005	.0009	.04972	mg/L	97.5	70	130			
L20553-05LFMD	LFMD	09/25/14 1:34	MS140904-3	.05005	.0009	.04879	mg/L	95.7	70	130	1.89	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371381													
WG371381ICV	ICV	09/18/14 23:17	II140917-1	2		1.961	mg/L	98.1	95	105			
WG371381ICB	ICB	09/18/14 23:23				U	mg/L		-0.03	0.03			
WG371381LFB	LFB	09/18/14 23:35	II140904-2	.5005		.52	mg/L	103.9	85	115			
L20531-02AS	AS	09/18/14 23:47	II140904-2	.5005	.03	.539	mg/L	101.7	85	115			
L20531-02ASD	ASD	09/18/14 23:50	II140904-2	.5005	.03	.532	mg/L	100.3	85	115	1.31	20	
L20545-02AS	AS	09/19/14 0:25	II140904-2	.5005	U	.518	mg/L	103.5	85	115			
L20545-02ASD	ASD	09/19/14 0:28	II140904-2	.5005	U	.516	mg/L	103.1	85	115	0.39	20	

SPF Water Engineering

ACZ Project ID: ***L20545***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371723													
WG371723ICV	ICV	09/24/14 20:41	II140825-1	2		1.979	mg/L	99	95	105			
WG371723ICB	ICB	09/24/14 20:47				U	mg/L		-0.03	0.03			
WG371620LRB	LRB	09/24/14 21:00				U	mg/L		-0.022	0.022			
WG371620LFB	LFB	09/24/14 21:03	II140904-2	.5005		.537	mg/L	107.3	85	115			
L20544-01LFM	LFM	09/24/14 21:18	II140904-2	.5005	U	.544	mg/L	108.7	70	130			
L20544-01LFMD	LFMD	09/24/14 21:21	II140904-2	.5005	U	.537	mg/L	107.3	70	130	1.3	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L20545***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20545-01	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Arsenic, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Copper, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371381	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Nickel, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371791	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371705	Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG371612	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371758	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371667	Nitrogen, ammonia	M350.1 - Automated Phenate	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371324	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering

ACZ Project ID: ***L20545***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20545-02	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Arsenic, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
		Copper, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Nickel, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371791	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371705	Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG371612	Chloride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371758	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371667	Nitrogen, ammonia	M350.1 - Automated Phenate	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371324	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20545***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20545-03	WG371723	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Arsenic, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG371723	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371705	Nickel, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371791	Silver, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG371705	Vanadium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG371757	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371758	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371756	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371757	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371667	Nitrogen, ammonia	M350.1 - Automated Phenate	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371852	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371324	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20545
Date Received: 09/16/2014 11:44
Received By: mtb
Date Printed: 9/17/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20414	0.6	10	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20545

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 3rd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**Method 1631						
GW-1	9/11/14 14:34	GW	8	X							
59772	9/11/14 15:39	GW	8	X							
59760	9/11/14 17:00	GW	8	X							
mercury trip blank	9/11/14 15:45	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	9-15-14 7:00		9-16-14 1140

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20545 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 03, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20589

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 18, 2014. This project has been assigned to ACZ's project number, L20589. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20589. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 02, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

October 03, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20589

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on September 18, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20589. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20589. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59761

ACZ Sample ID: ***L20589-01***
Date Sampled: *09/15/14 09:51*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:00	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/25/14 5:55	mss2
Total Hot Plate Digestion	M200.2 ICP-MS				*				09/30/14 18:04	las
Total Hot Plate Digestion	M200.2 ICP								09/25/14 10:23	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59761

ACZ Sample ID: ***L20589-01***
Date Sampled: *09/15/14 09:51*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/22/14 17:37	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/26/14 13:43	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/26/14 5:29	pmc
Antimony, total	M200.8 ICP-MS	2		U		mg/L	0.0008	0.004	10/01/14 15:47	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0223			mg/L	0.0002	0.001	09/26/14 5:29	pmc
Arsenic, total	M200.8 ICP-MS	2	0.0232			mg/L	0.0004	0.002	10/01/14 15:47	msh
Barium, dissolved	M200.7 ICP	1	0.047			mg/L	0.003	0.02	09/23/14 11:42	jjc
Barium, total	M200.7 ICP	1	0.043			mg/L	0.003	0.02	09/26/14 13:43	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:29	pmc
Beryllium, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	10/01/14 15:47	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/22/14 17:37	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/26/14 13:43	aeb
Boron, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/23/14 11:42	jjc
Boron, total	M200.7 ICP	1	0.07			mg/L	0.01	0.05	09/26/14 13:43	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:29	pmc
Cadmium, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	10/01/14 15:47	msh
Calcium, dissolved	M200.7 ICP	1	41.5		*	mg/L	0.1	0.5	09/22/14 17:37	jjc
Calcium, total	M200.7 ICP	1	42.1			mg/L	0.1	0.5	09/26/14 13:43	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0005	0.002	09/26/14 5:29	pmc
Chromium, total	M200.8 ICP-MS	2	0.001	B		mg/L	0.001	0.004	10/01/14 15:47	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	09/26/14 5:29	pmc
Cobalt, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	10/01/14 15:47	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:29	pmc
Copper, total	M200.8 ICP-MS	2		U	*	mg/L	0.001	0.005	10/01/14 15:47	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:37	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:43	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 11:42	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/26/14 13:43	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:29	pmc
Lead, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	10/01/14 15:47	msh
Lithium, dissolved	M200.7 ICP	1	0.039	B		mg/L	0.008	0.04	09/22/14 17:37	jjc
Lithium, total	M200.7 ICP	1	0.034	B		mg/L	0.008	0.04	09/26/14 13:43	aeb
Magnesium, dissolved	M200.7 ICP	1	10.1		*	mg/L	0.2	1	09/22/14 17:37	jjc
Magnesium, total	M200.7 ICP	1	10.2			mg/L	0.2	1	09/26/14 13:43	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:29	pmc
Manganese, total	M200.8 ICP-MS	2		U		mg/L	0.001	0.005	10/01/14 15:47	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 10:14	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 12:08	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0027	B		mg/L	0.0005	0.003	09/26/14 5:29	pmc
Molybdenum, total	M200.8 ICP-MS	2	0.003	B		mg/L	0.001	0.005	10/01/14 15:47	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/26/14 5:29	pmc
Nickel, total	M200.8 ICP-MS	2		U		mg/L	0.001	0.006	10/01/14 15:47	msh
Potassium, dissolved	M200.7 ICP	1	5.9			mg/L	0.2	1	09/22/14 17:37	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59761

ACZ Sample ID: ***L20589-01***
Date Sampled: *09/15/14 09:51*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.9			mg/L	0.2	1	09/26/14 13:43	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:37	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:43	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	09/26/14 5:29	pmc
Selenium, total	M200.8 ICP-MS	2	0.0015			mg/L	0.0002	0.0005	10/01/14 15:47	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:29	pmc
Silver, total	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	10/01/14 15:47	msh
Sodium, dissolved	M200.7 ICP	1	23.7			mg/L	0.2	1	09/22/14 17:37	jjc
Sodium, total	M200.7 ICP	1	23.2			mg/L	0.2	1	09/26/14 13:43	aeb
Strontium, dissolved	M200.7 ICP	1	0.229		*	mg/L	0.005	0.03	09/22/14 17:37	jjc
Strontium, total	M200.7 ICP	1	0.217			mg/L	0.005	0.03	09/26/14 13:43	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:29	pmc
Thallium, total	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	10/01/14 15:47	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/26/14 5:29	pmc
Tin, total	M200.8 ICP-MS	2		U	*	mg/L	0.0002	0.001	10/01/14 15:47	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/22/14 17:37	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/26/14 13:43	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	09/26/14 5:29	pmc
Uranium, total	M200.8 ICP-MS	2	0.0031			mg/L	0.0002	0.001	10/01/14 15:47	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0186			mg/L	0.0002	0.001	09/26/14 5:29	pmc
Vanadium, total	M200.8 ICP-MS	2	0.0215			mg/L	0.0004	0.002	10/01/14 15:47	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/22/14 17:37	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/26/14 13:43	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59761

ACZ Sample ID: ***L20589-01***
Date Sampled: *09/15/14 09:51*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	156			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	156			mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	12.9		*	mg/L	0.5	2.5	09/26/14 1:22	jlf
Conductivity @25C	SM2510B	1	409			umhos/cm	1	10	09/22/14 15:06	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:41	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:47	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.50		*	mg/L	0.05	0.25	09/26/14 1:22	jlf
Hardness as CaCO3	SM2340B - Calculation		145			mg/L	0.8	4	10/03/14 15:09	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.68		*	mg/L	0.02	0.1	09/25/14 23:01	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U		mg/L	0.05	0.2	09/26/14 13:33	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.7			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/25/14 23:37	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	290			mg/L	10	20	09/16/14 16:51	eaa
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U		mg/L	5	20	09/19/14 12:06	djc
Sulfate	M300.0 - Ion Chromatography	1	25.9			mg/L	0.5	2.5	09/26/14 1:22	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L20589-02***
Date Sampled: *09/15/14 11:55*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:00	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/25/14 6:36	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 18:15	las
Total Hot Plate Digestion	M200.2 ICP								09/25/14 10:58	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L20589-02***
Date Sampled: *09/15/14 11:55*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/22/14 17:46	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/26/14 13:53	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	09/26/14 5:32	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	10/01/14 15:50	msh
Arsenic, dissolved	M200.8 ICP-MS	40	4.440			mg/L	0.008	0.04	09/27/14 20:03	pmc
Arsenic, total	M200.8 ICP-MS	50	4.54			mg/L	0.01	0.05	10/02/14 20:36	msh
Barium, dissolved	M200.7 ICP	1	0.069			mg/L	0.003	0.02	09/23/14 11:51	jjc
Barium, total	M200.7 ICP	1	0.063			mg/L	0.003	0.02	09/26/14 13:53	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:32	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 15:50	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/22/14 17:46	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/26/14 13:53	aeb
Boron, dissolved	M200.7 ICP	1	0.60			mg/L	0.01	0.05	09/23/14 11:51	jjc
Boron, total	M200.7 ICP	1	0.61			mg/L	0.01	0.05	09/26/14 13:53	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:32	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 15:50	msh
Calcium, dissolved	M200.7 ICP	1	191		*	mg/L	0.1	0.5	09/22/14 17:46	jjc
Calcium, total	M200.7 ICP	1	186			mg/L	0.1	0.5	09/26/14 13:53	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/26/14 5:32	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 15:50	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.10000			mg/L	0.00005	0.0003	09/26/14 5:32	pmc
Cobalt, total	M200.8 ICP-MS	1	0.10890			mg/L	0.00005	0.0003	10/01/14 15:50	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:32	pmc
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	10/01/14 15:50	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:46	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:53	aeb
Iron, dissolved	M200.7 ICP	1	200			mg/L	0.02	0.05	09/23/14 11:51	jjc
Iron, total	M200.7 ICP	1	201			mg/L	0.02	0.05	09/26/14 13:53	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:32	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 15:50	msh
Lithium, dissolved	M200.7 ICP	1	0.772			mg/L	0.008	0.04	09/22/14 17:46	jjc
Lithium, total	M200.7 ICP	1	0.751			mg/L	0.008	0.04	09/26/14 13:53	aeb
Magnesium, dissolved	M200.7 ICP	1	10		*	mg/L	0.2	1	09/22/14 17:46	jjc
Magnesium, total	M200.7 ICP	1	9.8			mg/L	0.2	1	09/26/14 13:53	aeb
Manganese, dissolved	M200.8 ICP-MS	40	1.67			mg/L	0.02	0.1	09/27/14 20:03	pmc
Manganese, total	M200.8 ICP-MS	50	1.65		*	mg/L	0.03	0.1	10/02/14 20:36	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	09/30/14 10:19	las
Mercury, total	M1631, Atomic Fluorescence	1	1.9			ng/L	0.2	0.5	09/30/14 12:23	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.003	09/26/14 5:32	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0014	B		mg/L	0.0005	0.003	10/01/14 15:50	msh
Nickel, dissolved	M200.8 ICP-MS	1	0.1212			mg/L	0.0006	0.003	09/26/14 5:32	pmc
Nickel, total	M200.8 ICP-MS	1	0.1239			mg/L	0.0006	0.003	10/01/14 15:50	msh
Potassium, dissolved	M200.7 ICP	1	7.1			mg/L	0.2	1	09/22/14 17:46	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L20589-02***
Date Sampled: *09/15/14 11:55*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	7			mg/L	0.2	1	09/26/14 13:53	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:46	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:53	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/26/14 5:32	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	10/01/14 15:50	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:32	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 15:50	msh
Sodium, dissolved	M200.7 ICP	1	275			mg/L	0.2	1	09/22/14 17:46	jjc
Sodium, total	M200.7 ICP	1	265			mg/L	0.2	1	09/26/14 13:53	aeb
Strontium, dissolved	M200.7 ICP	1	4.200		*	mg/L	0.005	0.03	09/22/14 17:46	jjc
Strontium, total	M200.7 ICP	1	3.980			mg/L	0.005	0.03	09/26/14 13:53	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:32	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 15:50	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/26/14 5:32	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 15:50	msh
Titanium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	09/22/14 17:46	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/26/14 13:53	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	09/26/14 5:32	pmc
Uranium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	10/01/14 15:50	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/26/14 5:32	pmc
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	10/01/14 15:50	msh
Zinc, dissolved	M200.7 ICP	1	0.87			mg/L	0.01	0.05	09/22/14 17:46	jjc
Zinc, total	M200.7 ICP	1	0.86			mg/L	0.01	0.05	09/26/14 13:53	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BLM

ACZ Sample ID: ***L20589-02***
Date Sampled: *09/15/14 11:55*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	40.1			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	40.1		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	20	21.7	B	*	mg/L	10	50	09/26/14 2:15	jlf
Conductivity @25C	SM2510B	1	2240		*	umhos/cm	1	10	09/22/14 15:22	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:42	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:49	pjb
Fluoride	M300.0 - Ion Chromatography	20		U	*	mg/L	1	5	09/26/14 2:15	jlf
Hardness as CaCO3	SM2340B - Calculation		518			mg/L	0.8	4	10/03/14 15:10	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/25/14 23:02	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.79			mg/L	0.05	0.2	09/26/14 13:34	jlf
pH (lab)	SM4500H+ B									
pH		1	6.7	H	*	units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.5			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.31		*	mg/L	0.01	0.05	09/25/14 23:41	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1850		*	mg/L	10	20	09/19/14 10:09	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	110			mg/L	5	20	09/19/14 12:11	djc
Sulfate	M300.0 - Ion Chromatography	20	1200			mg/L	10	50	09/26/14 2:15	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L20589-03***
Date Sampled: *09/15/14 16:40*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/25/14 7:16	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 18:26	las
Total Hot Plate Digestion	M200.2 ICP								09/25/14 11:09	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L20589-03***
Date Sampled: *09/15/14 16:40*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/22/14 17:50	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/26/14 13:56	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/26/14 5:35	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 15:54	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0090			mg/L	0.0002	0.001	09/26/14 5:35	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0101			mg/L	0.0002	0.001	10/01/14 15:54	msh
Barium, dissolved	M200.7 ICP	1	0.023			mg/L	0.003	0.02	09/23/14 11:55	jjc
Barium, total	M200.7 ICP	1	0.020			mg/L	0.003	0.02	09/26/14 13:56	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:35	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 15:54	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/22/14 17:50	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/26/14 13:56	aeb
Boron, dissolved	M200.7 ICP	1	0.21			mg/L	0.01	0.05	09/23/14 11:55	jjc
Boron, total	M200.7 ICP	1	0.20			mg/L	0.01	0.05	09/26/14 13:56	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:35	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 15:54	msh
Calcium, dissolved	M200.7 ICP	1	5.4		*	mg/L	0.1	0.5	09/22/14 17:50	jjc
Calcium, total	M200.7 ICP	1	5.8			mg/L	0.1	0.5	09/26/14 13:56	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/26/14 5:35	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 15:54	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	09/26/14 5:35	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00008	B		mg/L	0.00005	0.0003	10/01/14 15:54	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:35	pmc
Copper, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	10/01/14 15:54	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:50	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:56	aeb
Iron, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.02	0.05	09/23/14 11:55	jjc
Iron, total	M200.7 ICP	1	0.04	B		mg/L	0.02	0.05	09/26/14 13:56	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	09/26/14 5:35	pmc
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	10/01/14 15:54	msh
Lithium, dissolved	M200.7 ICP	1	0.023	B		mg/L	0.008	0.04	09/22/14 17:50	jjc
Lithium, total	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	09/26/14 13:56	aeb
Magnesium, dissolved	M200.7 ICP	1	1.4		*	mg/L	0.2	1	09/22/14 17:50	jjc
Magnesium, total	M200.7 ICP	1	1.6			mg/L	0.2	1	09/26/14 13:56	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0059			mg/L	0.0005	0.003	09/26/14 5:35	pmc
Manganese, total	M200.8 ICP-MS	1	0.0060			mg/L	0.0005	0.003	10/01/14 15:54	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 10:24	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 12:28	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0091			mg/L	0.0005	0.003	09/26/14 5:35	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0095			mg/L	0.0005	0.003	10/01/14 15:54	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/26/14 5:35	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 15:54	msh
Potassium, dissolved	M200.7 ICP	1	4.1			mg/L	0.2	1	09/22/14 17:50	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L20589-03***
Date Sampled: *09/15/14 16:40*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.1			mg/L	0.2	1	09/26/14 13:56	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:50	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:56	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	09/26/14 5:35	pmc
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	10/01/14 15:54	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:35	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 15:54	msh
Sodium, dissolved	M200.7 ICP	1	80.3			mg/L	0.2	1	09/22/14 17:50	jjc
Sodium, total	M200.7 ICP	1	78.1			mg/L	0.2	1	09/26/14 13:56	aeb
Strontium, dissolved	M200.7 ICP	1	0.048		*	mg/L	0.005	0.03	09/22/14 17:50	jjc
Strontium, total	M200.7 ICP	1	0.043			mg/L	0.005	0.03	09/26/14 13:56	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:35	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 15:54	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/26/14 5:35	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 15:54	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/22/14 17:50	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/26/14 13:56	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0005	09/26/14 5:35	pmc
Uranium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0005	10/01/14 15:54	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0002	0.001	09/26/14 5:35	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0043			mg/L	0.0002	0.001	10/01/14 15:54	msh
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	09/22/14 17:50	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/26/14 13:56	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: BISHOP

ACZ Sample ID: ***L20589-03***
Date Sampled: *09/15/14 16:40*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	157			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1	4.9	B		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	162			mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	7.98		*	mg/L	0.5	2.5	09/26/14 2:33	jlf
Conductivity @25C	SM2510B	1	387			umhos/cm	1	10	09/22/14 15:31	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:44	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:50	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.67		*	mg/L	0.05	0.25	09/26/14 2:33	jlf
Hardness as CaCO3	SM2340B - Calculation		19			mg/L	0.8	4	10/03/14 15:10	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.27		*	mg/L	0.02	0.1	09/25/14 23:03	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U		mg/L	0.05	0.2	09/26/14 13:35	jlf
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.6			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.11		*	mg/L	0.01	0.05	09/25/14 23:42	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	250		*	mg/L	10	20	09/19/14 10:14	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U		mg/L	5	20	09/19/14 12:16	djc
Sulfate	M300.0 - Ion Chromatography	1	23.7			mg/L	0.5	2.5	09/26/14 2:33	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20589***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
L20589-01DUP	DUP	09/22/14 15:15			156	157	mg/L				0.6	20	
L20603-02DUP	DUP	09/22/14 16:44			174	174	mg/L				0	20	
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.031	mg/L	101.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.09	0.09			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.0015		1.08	mg/L	107.8	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.0015	.04	1.15	mg/L	110.8	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.0015	.04	1.156	mg/L	111.4	85	115	0.52	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.04	mg/L	102	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.09	0.09			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.066	0.066			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0015		1.051	mg/L	104.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0015	U	1.075	mg/L	107.3	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0015	U	1.078	mg/L	107.6	70	130	0.28	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.02002		.02094	mg/L	104.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0012	0.0012			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.01		.00988	mg/L	98.8	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.01	U	.00963	mg/L	96.3	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.01	U	.01018	mg/L	101.8	70	130	5.55	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.02002		.02054	mg/L	102.6	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0012	0.0012			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00088	0.00088			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.01		.01036	mg/L	103.6	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.01	U	.01007	mg/L	100.7	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.01	U	.00994	mg/L	99.4	70	130	1.3	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04974	mg/L	99.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0006	0.0006			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.05013	mg/L	100.1	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.0501	U	.04977	mg/L	99.3	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.0501	U	.04902	mg/L	97.8	70	130	1.52	20	
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05257	mg/L	105.1	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04753	mg/L	94.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	.0075	.05985	mg/L	104.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	.0075	.05988	mg/L	104.6	70	130	0.05	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.05022	mg/L	100.4	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0006	0.0006			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00044	0.00044			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.0501		.05358	mg/L	106.9	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.0501	.0004	.05136	mg/L	101.7	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.0501	.0004	.05203	mg/L	103.1	70	130	1.3	20	
WG372244													
WG372244ICV	ICV	10/02/14 20:23	MS141001-1	.05		.05097	mg/L	101.9	90	110			
WG372244ICB	ICB	10/02/14 20:26				U	mg/L		-0.0006	0.0006			
WG372046LRB	LRB	10/02/14 20:30				U	mg/L		-0.00044	0.00044			
WG372046LFB	LFB	10/02/14 20:33	MS140904-3	.0501		.05229	mg/L	104.4	85	115			
L20639-03LFM	LFM	10/02/14 20:49	MS140904-3	.0501	U	.0506	mg/L	101	70	130			
L20639-03LFMD	LFMD	10/02/14 20:53	MS140904-3	.0501	U	.0502	mg/L	100.2	70	130	0.79	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.9692	mg/L	98.5	95	105			
WG371625ICB	ICB	09/23/14 11:01				.0048	mg/L		-0.009	0.009			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	.5		.505	mg/L	101	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	2.5	.03	2.532	mg/L	100.1	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	2.5	.03	2.555	mg/L	101	85	115	0.9	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.9955	mg/L	99.8	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.009	0.009			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.0066	0.0066			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5		.5005	mg/L	100.1	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5	.043	.5503	mg/L	101.5	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5	.043	.5504	mg/L	101.5	70	130	0.02	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04628	mg/L	92.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04692	mg/L	93.7	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.04264	mg/L	85.2	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.04353	mg/L	87	70	130	2.07	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04849	mg/L	97	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.00015	0.00015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00011	0.00011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.0505	mg/L	100.9	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	.00076	.05143	mg/L	101.2	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	.00076	.05098	mg/L	100.3	70	130	0.88	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.999	mg/L	100	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.12	0.12			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.999		1.012	mg/L	101.3	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.999	U	1.096	mg/L	109.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.999	U	1.095	mg/L	109.6	85	115	0.09	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.029	mg/L	101.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.12	0.12			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.088	0.088			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.999		1.048	mg/L	104.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.999	U	1.071	mg/L	107.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.999	U	1.059	mg/L	106	70	130	1.13	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.994	mg/L	99.7	95	105			
WG371625ICB	ICB	09/23/14 11:01				U	mg/L		-0.03	0.03			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	.5005		.514	mg/L	102.7	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	2.5025	.12	2.609	mg/L	99.5	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	2.5025	.12	2.609	mg/L	99.5	85	115	0	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.047	mg/L	102.4	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.03	0.03			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.022	0.022			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.515	mg/L	102.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	.07	.593	mg/L	104.5	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	.07	.593	mg/L	104.5	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04941	mg/L	98.8	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.04929	mg/L	98.4	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.0501	U	.04669	mg/L	93.2	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.0501	U	.04845	mg/L	96.7	70	130	3.7	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04781	mg/L	95.6	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.0501		.04968	mg/L	99.2	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.0501	.0021	.05017	mg/L	95.9	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.0501	.0021	.04954	mg/L	94.7	70	130	1.26	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		98.9	mg/L	98.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				.1	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	67.99189		70.13	mg/L	103.1	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	67.99189	431	484.3	mg/L	78.4	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	67.99189	431	486.5	mg/L	81.6	85	115	0.45	20	M3

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		99.08	mg/L	99.1	95	105			
WG371877ICB	ICB	09/26/14 13:25				.12	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	67.99189		69.94	mg/L	102.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	67.99189	42.1	113.6	mg/L	105.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	67.99189	42.1	113.1	mg/L	104.4	70	130	0.44	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371821													
WG371821LFB1	LFB	09/25/14 15:48	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	30		31	mg/L	103.3	90	110			
L20657-07DUP	DUP	09/26/14 4:03			5.98	6	mg/L				0.3	20	RA
L20657-09AS	AS	09/26/14 4:39	WI140610-6	150	U	159	mg/L	106	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04678	mg/L	93.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04811	mg/L	96.1	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.04457	mg/L	89.1	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.04378	mg/L	87.5	70	130	1.79	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04821	mg/L	96.4	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0015	0.0015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.0011	0.0011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.04918	mg/L	98.3	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	.002	.05013	mg/L	96.2	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	.002	.0509	mg/L	97.7	70	130	1.52	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05077	mg/L	101.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05042	mg/L	100.7	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.04824	mg/L	96.4	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.04991	mg/L	99.7	70	130	3.4	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.05093	mg/L	101.9	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.00015	0.00015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00011	0.00011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.04912	mg/L	98.1	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	.02	.06744	mg/L	94.8	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	.02	.06761	mg/L	95.1	70	130	0.25	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
L20589-01DUP	DUP	09/22/14 15:15			409	403	umhos/cm				1.5	20	
L20603-02DUP	DUP	09/22/14 16:44			1260	1260	umhos/cm				0	20	
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04727	mg/L	94.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05		.0474	mg/L	94.8	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05	.0013	.04225	mg/L	81.9	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05	.0013	.04157	mg/L	80.5	70	130	1.62	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04934	mg/L	98.7	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0015	0.0015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.0011	0.0011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05		.05094	mg/L	101.9	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05	1.78	1.81	mg/L	60	70	130			M3
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05	1.78	1.839	mg/L	118	70	130	1.59	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20589-01DUP	DUP	09/26/14 20:42			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 20:43	WI140918-4	.2	U	.1455	mg/L	72.8	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20589-01DUP	DUP	09/26/14 21:48			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 21:49	WI140918-6	.2	U	.1808	mg/L	90.4	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371821													
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	1.5		1.56	mg/L	104	90	110			
L20657-07DUP	DUP	09/26/14 4:03			.6	.61	mg/L				1.7	20	RA
L20657-09AS	AS	09/26/14 4:39	WI140610-6	7.5	U	8.08	mg/L	107.7	90	110			
WG371821LFB1	LFB	09/26/14 11:29	WI140610-6	1.5		1.52	mg/L	101.3	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.05	mg/L	102.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.001		1.01	mg/L	100.9	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.001	U	1.07	mg/L	106.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.001	U	1.1	mg/L	109.9	85	115	2.76	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.07	mg/L	103.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.001		1.06	mg/L	105.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.001	U	1.06	mg/L	105.9	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.001	U	1.05	mg/L	104.9	70	130	0.95	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.975	mg/L	98.8	95	105			
WG371625ICB	ICB	09/23/14 11:01				U	mg/L		-0.06	0.06			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	1.0014		1.042	mg/L	104.1	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	5.007	6	11.01	mg/L	102.1	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	5.007	6	11.04	mg/L	102.7	85	115	0.27	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.99	mg/L	99.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.06	0.06			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.044	0.044			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0014		1.048	mg/L	104.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0014	U	1.047	mg/L	104.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0014	U	1.042	mg/L	104.1	70	130	0.48	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05085	mg/L	101.7	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04893	mg/L	97.8	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	.0002	.04952	mg/L	98.5	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	.0002	.05081	mg/L	101.1	70	130	2.57	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.05177	mg/L	103.5	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.04956	mg/L	99	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	.0018	.05205	mg/L	100.4	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	.0018	.05212	mg/L	100.5	70	130	0.13	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.0082	mg/L	100.4	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.024	0.024			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.002		1.002	mg/L	100	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.002	.019	1.072	mg/L	105.1	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.002	.019	1.079	mg/L	105.8	85	115	0.65	20	

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ACZ Project ID: ***L20589***

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.031	mg/L	101.6	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.024	0.024			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.0176	0.0176			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.002		1.02	mg/L	101.8	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.002	.034	1.072	mg/L	103.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.002	.034	1.075	mg/L	103.9	70	130	0.28	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		96.9	mg/L	96.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				.24	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	50.00283		49.01	mg/L	98	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	50.00283	493	525.8	mg/L	65.6	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	50.00283	493	528.5	mg/L	71	85	115	0.51	20	M3

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		96.88	mg/L	96.9	95	105			
WG371877ICB	ICB	09/26/14 13:25				.31	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				.31	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	50.00283		49.17	mg/L	98.3	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	50.00283	10.2	59.91	mg/L	99.4	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	50.00283	10.2	59.73	mg/L	99.1	70	130	0.3	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05071	mg/L	101.4	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.05002	mg/L	99.8	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.0501	.0009	.04992	mg/L	97.8	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.0501	.0009	.05082	mg/L	99.6	70	130	1.79	20	
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05221	mg/L	104.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.05037	mg/L	100.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04944	mg/L	98.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.048	mg/L	95.8	70	130	2.96	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04978	mg/L	99.6	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0015	0.0015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.0011	0.0011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.0501		.04884	mg/L	97.5	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.0501	1.05	1.097	mg/L	93.8	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.0501	1.05	1.093	mg/L	85.8	70	130	0.37	20	
WG372244													
WG372244ICV	ICV	10/02/14 20:23	MS141001-1	.05		.05084	mg/L	101.7	90	110			
WG372244ICB	ICB	10/02/14 20:26				U	mg/L		-0.0015	0.0015			
WG372046LRB	LRB	10/02/14 20:30				U	mg/L		-0.0011	0.0011			
WG372046LFB	LFB	10/02/14 20:33	MS140904-3	.0501		.0493	mg/L	98.4	85	115			
L20639-03LFM	LFM	10/02/14 20:49	MS140904-3	.0501	1.1	1.145	mg/L	89.8	70	130			
L20639-03LFMD	LFMD	10/02/14 20:53	MS140904-3	.0501	1.1	1.129	mg/L	57.9	70	130	1.41	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
L20545-01MS	MS	09/30/14 9:44	HG140929-6	2	.3	2.27	ng/L	98.5	71	125			
L20545-01MSD	MSD	09/30/14 9:49	HG140929-6	2	.3	2.32	ng/L	101	71	125	2.18	24	
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L20589***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372048													
WG372048CCV1	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG372048CCB1	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			
WG372048PQV	PQV	09/30/14 11:48	HG140929-5	.5		.51	ng/L	102	70	130			
WG372048LFB	LFB	09/30/14 11:53	HG140929-6	2		1.99	ng/L	99.5	71	125			
L20589-01MS	MS	09/30/14 12:13	HG140929-6	2	.3	2.31	ng/L	101.9	71	125			
L20589-01MSD	MSD	09/30/14 12:18	HG140929-6	2	.3	2.27	ng/L	98.5	71	125	1.75	24	
WG372048CCV2	CCV	09/30/14 12:44	HG140929-4	10		9.89	ng/L	98.9	76.5	123.4			
WG372048CCB2	CCB	09/30/14 12:49				U	ng/L		-0.5	0.5			
WG372048CCV3	CCV	09/30/14 13:39	HG140929-4	10		9.91	ng/L	99.1	76.5	123.4			
WG372048CCB3	CCB	09/30/14 13:44				U	ng/L		-0.5	0.5			
WG372048CCV4	CCV	09/30/14 14:20	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG372048CCB4	CCB	09/30/14 14:25				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.01998		.01946	mg/L	97.4	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0502		.04931	mg/L	98.2	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.0502	.0006	.05075	mg/L	99.9	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.0502	.0006	.0528	mg/L	104	70	130	3.96	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.01998		.02003	mg/L	100.3	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0015	0.0015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.0011	0.0011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.0502		.05133	mg/L	102.3	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.0502	U	.05235	mg/L	104.3	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.0502	U	.05167	mg/L	102.9	70	130	1.31	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04838	mg/L	96.8	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0018	0.0018			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05		.049	mg/L	98	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05	U	.0424	mg/L	84.8	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05	U	.04136	mg/L	82.7	70	130	2.48	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04884	mg/L	97.7	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0018	0.0018			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00132	0.00132			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05		.0491	mg/L	98.2	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05	.0226	.06998	mg/L	94.8	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05	.0226	.07178	mg/L	98.4	70	130	2.54	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371848													
WG371848ICV	ICV	09/25/14 20:42	WI140718-9	2.416		2.375	mg/L	98.3	90	110			
WG371848ICB	ICB	09/25/14 20:43				U	mg/L		-0.06	0.06			
WG371853													
WG371853LFB1	LFB	09/25/14 22:30	WI140719-4	2		1.916	mg/L	95.8	90	110			
L20546-07AS	AS	09/25/14 22:49	WI140719-4	2	.13	2.094	mg/L	98.2	90	110			
L20546-08DUP	DUP	09/25/14 22:51			.08	.082	mg/L				2.5	20	RA
WG371853LFB2	LFB	09/25/14 23:05	WI140719-4	2		1.859	mg/L	93	90	110			

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371894													
WG371894ICV	ICV	09/26/14 11:59	WI131021-1	1.003		1.02	mg/L	101.7	90	110			
WG371894ICB	ICB	09/26/14 12:02				U	mg/L		-0.15	0.15			
WG371896													
WG371896LFB1	LFB	09/26/14 13:04	WI140113-8	1		.916	mg/L	91.6	90	110			
L20586-01AS	AS	09/26/14 13:22	WI140113-8	1	U	1.045	mg/L	104.5	90	110			
L20586-02DUP	DUP	09/26/14 13:24			2.11	2.07	mg/L				1.9	20	
WG371896LFB2	LFB	09/26/14 13:36	WI140113-8	1		.9	mg/L	90	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20589-01DUP	DUP	09/22/14 15:15			8.2	8.1	units				1.2	20	
L20603-02DUP	DUP	09/22/14 16:44			7.8	7.8	units				0	20	
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

SPF Water Engineering

ACZ Project ID: ***L20589***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371852													
WG371852ICV	ICV	09/25/14 22:25	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG371852ICB	ICB	09/25/14 22:28				U	mg/L		-0.03	0.03			
WG371855													
WG371760LRB	LRB	09/25/14 23:13				U	mg/L		-0.03	0.03			
WG371760LFB	LFB	09/25/14 23:15	WI140918-1	.5		.469	mg/L	93.8	90	110			
L20579-01LFM	LFM	09/25/14 23:33	WI140918-1	.5	.05	.518	mg/L	93.6	90	110			
L20580-01DUP	DUP	09/25/14 23:35			.03	.025	mg/L				18.2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	20		19.71	mg/L	98.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	98.07852		98.91	mg/L	100.8	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	98.07852	1.9	105.4	mg/L	105.5	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	98.07852	1.9	106	mg/L	106.1	85	115	0.57	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	20		19.85	mg/L	99.3	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	98.07852		97.92	mg/L	99.8	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	98.07852	5.9	105.6	mg/L	101.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	98.07852	5.9	105.7	mg/L	101.8	70	130	0.09	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371426													
WG371426PBW	PBW	09/16/14 16:19				U	mg/L		-20	20			
WG371426LCSW	LCSW	09/16/14 16:21	PCN46225	260		240	mg/L	92.3	80	120			
L20611-01DUP	DUP	09/16/14 17:08			880	876	mg/L				0.5	10	
WG371462													
WG371462PBW	PBW	09/19/14 9:43				U	mg/L		-20	20			
WG371462LCSW	LCSW	09/19/14 9:48	PCN46226	260		252	mg/L	96.9	80	120			
L20598-04DUP	DUP	09/19/14 11:42			990	984	mg/L				0.6	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371481													
WG371481PBW	PBW	09/19/14 11:35				U	mg/L		-15	15			
WG371481LCSW	LCSW	09/19/14 11:40	PCN46226	160		154	mg/L	96.3	80	120			
L20595-01DUP	DUP	09/19/14 12:37			223	246	mg/L				9.8	10	

SPF Water Engineering

ACZ Project ID: ***L20589***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.01	mg/L	100.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.0009	U	1.08	mg/L	107.9	85	115	1.87	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.01	mg/L	100.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0009	U	1.07	mg/L	106.9	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0009	U	1.07	mg/L	106.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05103	mg/L	102.1	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05015		.0518	mg/L	103.3	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05015	U	.0515	mg/L	102.7	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05015	U	.05029	mg/L	100.3	70	130	2.38	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.05009	mg/L	100.2	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05015		.05443	mg/L	108.5	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05015	.0002	.05205	mg/L	103.4	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05015	.0002	.05159	mg/L	102.5	70	130	0.89	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.02002		.02026	mg/L	101.2	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.01002		.009803	mg/L	97.8	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.01002	U	.008226	mg/L	82.1	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.01002	U	.008756	mg/L	87.4	70	130	6.24	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.02002		.02013	mg/L	100.5	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.00015	0.00015			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00011	0.00011			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.01002		.009724	mg/L	97	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.01002	.00008	.009363	mg/L	92.6	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.01002	.00008	.009268	mg/L	91.7	70	130	1.02	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		98.35	mg/L	98.4	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	100.0589		99.61	mg/L	99.6	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	100.0589	23.9	127.7	mg/L	103.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	100.0589	23.9	128.6	mg/L	104.6	85	115	0.7	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		98.39	mg/L	98.4	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	100.0589		97.65	mg/L	97.6	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	100.0589	23.2	123	mg/L	99.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	100.0589	23.2	123.2	mg/L	99.9	70	130	0.16	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.9702	mg/L	98.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				.0064	mg/L		-0.015	0.015			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.5005		.5165	mg/L	103.2	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.5005	4.17	4.526	mg/L	71.1	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.5005	4.17	4.524	mg/L	70.7	85	115	0.04	20	M3

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.9762	mg/L	98.8	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.015	0.015			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.011	0.011			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.4955	mg/L	99	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	.217	.7257	mg/L	101.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	.217	.727	mg/L	101.9	70	130	0.18	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371821													
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	30		30.2	mg/L	100.7	90	110			
L20657-07DUP	DUP	09/26/14 4:03			760	762	mg/L				0.3	20	
L20657-09AS	AS	09/26/14 4:39	WI140610-6	150	176	330	mg/L	102.7	90	110			
WG371821LFB1	LFB	09/26/14 11:29	WI140610-6	30		30	mg/L	100	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05295	mg/L	105.9	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0502		.05173	mg/L	103	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.0502	U	.0512	mg/L	102	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.0502	U	.05328	mg/L	106.1	70	130	3.98	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.05206	mg/L	104.1	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.0502		.04989	mg/L	99.4	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.0502	U	.05093	mg/L	101.5	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.0502	U	.05133	mg/L	102.3	70	130	0.78	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.0501		.04877	mg/L	97.3	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05005	mg/L	100	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.04829	mg/L	96.5	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.05021	mg/L	100.3	70	130	3.9	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.0501		.05104	mg/L	101.9	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.05261	mg/L	105.1	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	U	.05414	mg/L	108.2	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	U	.05212	mg/L	104.1	70	130	3.8	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.0127	mg/L	100.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.015	0.015			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.005		1.017	mg/L	101.2	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.005	.006	1.03	mg/L	101.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.005	.006	1.042	mg/L	103.1	85	115	1.16	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.0372	mg/L	101.9	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.015	0.015			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.011	0.011			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.005		1.042	mg/L	103.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.005	U	1.047	mg/L	104.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.005	U	1.046	mg/L	104.1	70	130	0.1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05209	mg/L	104.2	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05129	mg/L	102.5	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.05277	mg/L	105.4	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.054	mg/L	107.9	70	130	2.3	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.04986	mg/L	99.7	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0003	0.0003			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00022	0.00022			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.04891	mg/L	97.7	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	.0022	.05347	mg/L	102.4	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	.0022	.05384	mg/L	103.2	70	130	0.69	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04557	mg/L	91.1	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0006	0.0006			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04836	mg/L	96.6	85	115			
L20577-04AS	AS	09/26/14 5:07	MS140904-3	.05005	U	.0473	mg/L	94.5	70	130			
L20577-04ASD	ASD	09/26/14 5:10	MS140904-3	.05005	U	.04629	mg/L	92.5	70	130	2.16	20	

SPF Water Engineering

ACZ Project ID: ***L20589***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372128													
WG372128ICV	ICV	10/01/14 15:20	MS141001-1	.05		.0481	mg/L	96.2	90	110			
WG372128ICB	ICB	10/01/14 15:24				U	mg/L		-0.0006	0.0006			
WG372046LRB	LRB	10/01/14 15:27				U	mg/L		-0.00044	0.00044			
WG372046LFB	LFB	10/01/14 15:30	MS140904-3	.05005		.05077	mg/L	101.4	85	115			
L20639-03LFM	LFM	10/01/14 16:13	MS140904-3	.05005	U	.05055	mg/L	101	70	130			
L20639-03LFMD	LFMD	10/01/14 16:16	MS140904-3	.05005	U	.0511	mg/L	102.1	70	130	1.08	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.938	mg/L	96.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.03	0.03			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.5005		.511	mg/L	102.1	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.5005	U	.494	mg/L	98.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.5005	U	.507	mg/L	101.3	85	115	2.6	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.98	mg/L	99	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.03	0.03			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.022	0.022			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.514	mg/L	102.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	U	.514	mg/L	102.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	U	.515	mg/L	102.9	70	130	0.19	20	

Inorganic Extended Qualifier Report

SPF Water Engineering ACZ Project ID: ***L20589***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20589-01	WG372046	Total Hot Plate Digestion	M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.
	WG371560	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG372128	Copper, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371560	Magnesium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371821	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371821	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371853	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371855	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20589***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20589-02	WG371560	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG372128	Copper, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371560	Magnesium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG372244	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371560	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371821	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371821	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371853	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG371855	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371462	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.
	WG371546	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

SPF Water Engineering ACZ Project ID: ***L20589***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20589-03	WG371560	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG372128	Copper, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371560	Magnesium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371821	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371821	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371853	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371855	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371462	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20589
Date Received: 09/18/2014 10:00
Received By: mtb
Date Printed: 9/18/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20422	3.8	8	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20589

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 3rd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
59761	9/15/14 9:51	GW	8	X							
BLM	9/15/14 11:55	GW	8	X							
Bishop	9/15/14 16:40	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9-17-14 7:00	[signature]	9-18-14 1000

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20589 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 06, 2014

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20590

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 18, 2014. This project has been assigned to ACZ's project number, L20590. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20590. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 05, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 06, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20590

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on September 18, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20590. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20590. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L20590-01***
Date Sampled: *09/15/14 13:43*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/25/14 7:57	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 10:06	las
Total Hot Plate Digestion	M200.2 ICP								09/25/14 11:21	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L20590-01***
Date Sampled: *09/15/14 13:43*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.03	0.2	09/22/14 17:53	jjc
Aluminum, total	M200.7 ICP	1	0.09	B		mg/L	0.03	0.2	09/26/14 13:59	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	09/26/14 5:38	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	10/01/14 0:17	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0621			mg/L	0.0002	0.001	09/26/14 5:38	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0664			mg/L	0.0002	0.001	10/01/14 0:17	pmc
Barium, dissolved	M200.7 ICP	1	0.026			mg/L	0.003	0.02	09/23/14 11:58	jjc
Barium, total	M200.7 ICP	1	0.023			mg/L	0.003	0.02	09/26/14 13:59	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:38	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 0:17	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/22/14 17:53	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/26/14 13:59	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	09/23/14 11:58	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	09/26/14 13:59	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:38	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 0:17	pmc
Calcium, dissolved	M200.7 ICP	1	54.3		*	mg/L	0.1	0.5	09/22/14 17:53	jjc
Calcium, total	M200.7 ICP	1	55.6			mg/L	0.1	0.5	09/26/14 13:59	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/26/14 5:38	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 0:17	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00025	B		mg/L	0.00005	0.0003	09/26/14 5:38	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	10/01/14 0:17	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:38	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 0:17	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:53	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:59	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 11:58	jjc
Iron, total	M200.7 ICP	1	0.08			mg/L	0.02	0.05	09/26/14 13:59	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:38	pmc
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	10/01/14 0:17	pmc
Lithium, dissolved	M200.7 ICP	1	0.201			mg/L	0.008	0.04	09/22/14 17:53	jjc
Lithium, total	M200.7 ICP	1	0.198			mg/L	0.008	0.04	09/26/14 13:59	aeb
Magnesium, dissolved	M200.7 ICP	1	6.1		*	mg/L	0.2	1	09/22/14 17:53	jjc
Magnesium, total	M200.7 ICP	1	6.3			mg/L	0.2	1	09/26/14 13:59	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0867			mg/L	0.0005	0.003	09/26/14 5:38	pmc
Manganese, total	M200.8 ICP-MS	1	0.0997		*	mg/L	0.0005	0.003	10/01/14 0:17	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/30/14 10:29	las
Mercury, total	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	09/30/14 15:38	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0113			mg/L	0.0005	0.003	09/26/14 5:38	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0115			mg/L	0.0005	0.003	10/01/14 0:17	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/26/14 5:38	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 0:17	pmc
Potassium, dissolved	M200.7 ICP	1	25.9			mg/L	0.2	1	09/22/14 17:53	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L20590-01***
Date Sampled: *09/15/14 13:43*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	26.3			mg/L	0.2	1	09/26/14 13:59	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:53	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 13:59	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	09/26/14 5:38	pmc
Selenium, total	M200.8 ICP-MS	1	0.0008			mg/L	0.0001	0.0003	10/01/14 0:17	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:38	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 0:17	pmc
Sodium, dissolved	M200.7 ICP	1	292			mg/L	0.2	1	09/22/14 17:53	jjc
Sodium, total	M200.7 ICP	1	292			mg/L	0.2	1	09/26/14 13:59	aeb
Strontium, dissolved	M200.7 ICP	1	0.179		*	mg/L	0.005	0.03	09/22/14 17:53	jjc
Strontium, total	M200.7 ICP	1	0.173			mg/L	0.005	0.03	09/26/14 13:59	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:38	pmc
Thallium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	10/01/14 0:17	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/26/14 5:38	pmc
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	10/01/14 0:17	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/22/14 17:53	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/26/14 13:59	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	09/26/14 5:38	pmc
Uranium, total	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0005	10/01/14 0:17	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0002	0.001	09/26/14 5:38	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0002	0.001	10/01/14 0:17	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/22/14 17:53	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/26/14 13:59	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: 59763

ACZ Sample ID: ***L20590-01***
Date Sampled: *09/15/14 13:43*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	203			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	203			mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	10	18.2	B	*	mg/L	5	25	09/26/14 2:51	jlf
Conductivity @25C	SM2510B	1	1710			umhos/cm	1	10	09/22/14 15:40	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:45	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:51	pjb
Fluoride	M300.0 - Ion Chromatography	10	0.92	B	*	mg/L	0.5	2.5	09/26/14 2:51	jlf
Hardness as CaCO3	SM2340B - Calculation		161			mg/L	0.8	4	10/06/14 8:21	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/25/14 23:06	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 14:03	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.6			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	09/25/14 23:43	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1160		*	mg/L	10	20	09/19/14 10:19	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	6	B		mg/L	5	20	09/19/14 12:21	djc
Sulfate	M300.0 - Ion Chromatography	10	582			mg/L	5	25	09/26/14 2:51	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59763-DUP

ACZ Sample ID: ***L20590-02***
Date Sampled: *09/15/14 13:53*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:01	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/25/14 8:38	mss2
Total Hot Plate Digestion	M200.2 ICP								09/25/14 11:32	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 10:17	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59763-DUP

ACZ Sample ID: ***L20590-02***
Date Sampled: *09/15/14 13:53*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.03	B		mg/L	0.03	0.2	09/22/14 17:56	jjc
Aluminum, total	M200.7 ICP	1	0.12	B		mg/L	0.03	0.2	09/26/14 14:02	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0004	0.002	09/26/14 5:41	pmc
Antimony, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	10/01/14 0:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0660			mg/L	0.0002	0.001	09/26/14 5:41	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0669			mg/L	0.0002	0.001	10/01/14 0:20	pmc
Barium, dissolved	M200.7 ICP	1	0.026			mg/L	0.003	0.02	09/23/14 12:01	jjc
Barium, total	M200.7 ICP	1	0.023			mg/L	0.003	0.02	09/26/14 14:02	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:41	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 0:20	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/22/14 17:56	jjc
Bismuth, total	M200.7 ICP	1	0.04	B	*	mg/L	0.04	0.2	09/26/14 14:02	aeb
Boron, dissolved	M200.7 ICP	1	0.17			mg/L	0.01	0.05	09/23/14 12:01	jjc
Boron, total	M200.7 ICP	1	0.17			mg/L	0.01	0.05	09/26/14 14:02	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:41	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 0:20	pmc
Calcium, dissolved	M200.7 ICP	1	54.4			mg/L	0.1	0.5	09/22/14 17:56	jjc
Calcium, total	M200.7 ICP	1	54.7			mg/L	0.1	0.5	09/26/14 14:02	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/26/14 5:41	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 0:20	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00031			mg/L	0.00005	0.0003	09/26/14 5:41	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	10/01/14 0:20	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/26/14 5:41	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 0:20	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:56	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 14:02	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 12:01	jjc
Iron, total	M200.7 ICP	1	0.11			mg/L	0.02	0.05	09/26/14 14:02	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:41	pmc
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	10/01/14 0:20	pmc
Lithium, dissolved	M200.7 ICP	1	0.203			mg/L	0.008	0.04	09/22/14 17:56	jjc
Lithium, total	M200.7 ICP	1	0.196			mg/L	0.008	0.04	09/26/14 14:02	aeb
Magnesium, dissolved	M200.7 ICP	1	6.1			mg/L	0.2	1	09/22/14 17:56	jjc
Magnesium, total	M200.7 ICP	1	6.2			mg/L	0.2	1	09/26/14 14:02	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0857			mg/L	0.0005	0.003	09/26/14 5:41	pmc
Manganese, total	M200.8 ICP-MS	1	0.0992		*	mg/L	0.0005	0.003	10/01/14 0:20	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/30/14 10:34	las
Mercury, total	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	09/30/14 15:43	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0118			mg/L	0.0005	0.003	09/26/14 5:41	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0116			mg/L	0.0005	0.003	10/01/14 0:20	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/26/14 5:41	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 0:20	pmc
Potassium, dissolved	M200.7 ICP	1	26			mg/L	0.2	1	09/22/14 17:56	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59763-DUP

ACZ Sample ID: ***L20590-02***
Date Sampled: *09/15/14 13:53*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	26			mg/L	0.2	1	09/26/14 14:02	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/22/14 17:56	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/26/14 14:02	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	09/26/14 5:41	pmc
Selenium, total	M200.8 ICP-MS	1	0.0005			mg/L	0.0001	0.0003	10/01/14 0:20	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/26/14 5:41	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 0:20	pmc
Sodium, dissolved	M200.7 ICP	1	291			mg/L	0.2	1	09/22/14 17:56	jjc
Sodium, total	M200.7 ICP	1	289			mg/L	0.2	1	09/26/14 14:02	aeb
Strontium, dissolved	M200.7 ICP	1	0.179			mg/L	0.005	0.03	09/22/14 17:56	jjc
Strontium, total	M200.7 ICP	1	0.171			mg/L	0.005	0.03	09/26/14 14:02	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/26/14 5:41	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 0:20	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/26/14 5:41	pmc
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	10/01/14 0:20	pmc
Titanium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	09/22/14 17:56	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/26/14 14:02	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0022			mg/L	0.0001	0.0005	09/26/14 5:41	pmc
Uranium, total	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	10/01/14 0:20	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0002	0.001	09/26/14 5:41	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0026			mg/L	0.0002	0.001	10/01/14 0:20	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/22/14 17:56	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/26/14 14:02	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: 59763-DUP

ACZ Sample ID: ***L20590-02***
Date Sampled: *09/15/14 13:53*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	210			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	210			mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	10	12.1	B	*	mg/L	5	25	09/26/14 17:32	jlf
Conductivity @25C	SM2510B	1	1700			umhos/cm	1	10	09/22/14 15:50	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:46	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:52	pjb
Fluoride	M300.0 - Ion Chromatography	10	0.66	B	*	mg/L	0.5	2.5	09/26/14 17:32	jlf
Hardness as CaCO3	SM2340B - Calculation		161			mg/L	0.8	4	10/06/14 8:22	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/25/14 23:08	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 14:05	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.5			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.04	B	*	mg/L	0.01	0.05	09/25/14 23:44	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1170		*	mg/L	10	20	09/19/14 10:24	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U		mg/L	5	20	09/19/14 12:27	djc
Sulfate	M300.0 - Ion Chromatography	10	377			mg/L	5	25	09/26/14 17:32	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: MERCURY TRIP BLANK

ACZ Sample ID: ***L20590-03***
Date Sampled: *09/15/14 14:00*
Date Received: *09/18/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 10:40	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 15:48	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20590***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
L20603-02DUP	DUP	09/22/14 16:44			174	174	mg/L				0	20	
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.031	mg/L	101.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.09	0.09			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.0015		1.08	mg/L	107.8	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.0015	.04	1.15	mg/L	110.8	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.0015	.04	1.156	mg/L	111.4	85	115	0.52	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	1.0015	U	1.12	mg/L	111.8	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	1.0015	U	1.107	mg/L	110.5	85	115	1.17	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.04	mg/L	102	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.09	0.09			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.066	0.066			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0015		1.051	mg/L	104.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0015	U	1.075	mg/L	107.3	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0015	U	1.078	mg/L	107.6	70	130	0.28	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.02002		.02094	mg/L	104.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0012	0.0012			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.01		.00988	mg/L	98.8	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.01	U	.00942	mg/L	94.2	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.01	U	.00968	mg/L	96.8	70	130	2.72	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.02015	mg/L	100.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0012	0.0012			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00088	0.00088			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01		.01066	mg/L	106.6	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.01	U	.0103	mg/L	103	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.01	U	.0102	mg/L	102	70	130	0.98	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04974	mg/L	99.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0006	0.0006			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.05013	mg/L	100.1	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.0501	U	.05022	mg/L	100.2	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.0501	U	.05208	mg/L	104	70	130	3.64	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05136	mg/L	102.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.0554	mg/L	110.6	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.0501	.0012	.05358	mg/L	104.6	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.0501	.0012	.05295	mg/L	103.3	70	130	1.18	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.9692	mg/L	98.5	95	105			
WG371625ICB	ICB	09/23/14 11:01				.0048	mg/L		-0.009	0.009			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	.5		.505	mg/L	101	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	2.5	.03	2.532	mg/L	100.1	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	2.5	.03	2.555	mg/L	101	85	115	0.9	20	
L20600-01AS	AS	09/23/14 12:07	II140904-2	.5	.029	.5204	mg/L	98.3	85	115			
L20600-01ASD	ASD	09/23/14 12:11	II140904-2	.5	.029	.5266	mg/L	99.5	85	115	1.18	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.9955	mg/L	99.8	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.009	0.009			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.0066	0.0066			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5		.5005	mg/L	100.1	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5	.043	.5503	mg/L	101.5	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5	.043	.5504	mg/L	101.5	70	130	0.02	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04628	mg/L	92.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04692	mg/L	93.7	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	.00006	.04709	mg/L	94	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	.00006	.04844	mg/L	96.7	70	130	2.83	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04761	mg/L	95.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05194	mg/L	103.8	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.00294	.05439	mg/L	102.8	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.00294	.05279	mg/L	99.6	70	130	2.99	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.999	mg/L	100	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.12	0.12			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.999		1.012	mg/L	101.3	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.999	U	1.096	mg/L	109.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.999	U	1.095	mg/L	109.6	85	115	0.09	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	.999	U	1.062	mg/L	106.3	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	.999	U	1.035	mg/L	103.6	85	115	2.58	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.029	mg/L	101.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.12	0.12			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.088	0.088			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.999		1.048	mg/L	104.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.999	U	1.071	mg/L	107.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.999	U	1.059	mg/L	106	70	130	1.13	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.994	mg/L	99.7	95	105			
WG371625ICB	ICB	09/23/14 11:01				U	mg/L		-0.03	0.03			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	.5005		.514	mg/L	102.7	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	2.5025	.12	2.609	mg/L	99.5	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	2.5025	.12	2.609	mg/L	99.5	85	115	0	20	
L20600-01AS	AS	09/23/14 12:07	II140904-2	.5005	.01	.517	mg/L	101.3	85	115			
L20600-01ASD	ASD	09/23/14 12:11	II140904-2	.5005	.01	.523	mg/L	102.5	85	115	1.15	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.047	mg/L	102.4	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.03	0.03			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.022	0.022			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.515	mg/L	102.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	.07	.593	mg/L	104.5	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	.07	.593	mg/L	104.5	70	130	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04941	mg/L	98.8	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.04929	mg/L	98.4	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.0501	.0002	.04982	mg/L	99	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.0501	.0002	.05072	mg/L	100.8	70	130	1.79	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0493	mg/L	98.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.05148	mg/L	102.8	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.0501	.0056	.05537	mg/L	99.3	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.0501	.0056	.05526	mg/L	99.1	70	130	0.2	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		98.9	mg/L	98.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				.1	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	67.99189		70.13	mg/L	103.1	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	67.99189	431	484.3	mg/L	78.4	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	67.99189	431	486.5	mg/L	81.6	85	115	0.45	20	M3
L20593-01AS	AS	09/22/14 18:02	II140904-2	67.99189	2.8	74.91	mg/L	106.1	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	67.99189	2.8	73.44	mg/L	103.9	85	115	1.98	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		99.08	mg/L	99.1	95	105			
WG371877ICB	ICB	09/26/14 13:25				.12	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	67.99189		69.94	mg/L	102.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	67.99189	42.1	113.6	mg/L	105.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	67.99189	42.1	113.1	mg/L	104.4	70	130	0.44	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	19.94		19.1	mg/L	95.8	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371821													
WG371821LFB1	LFB	09/25/14 15:48	WI140610-6	30		31.1	mg/L	103.7	90	110			
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	30		31	mg/L	103.3	90	110			
L20657-07DUP	DUP	09/26/14 4:03			5.98	6	mg/L				0.3	20	RA
L20657-09AS	AS	09/26/14 4:39	WI140610-6	150	U	159	mg/L	106	90	110			
WG371920													
WG371920LFB1	LFB	09/26/14 17:14	WI140610-6	30		31.3	mg/L	104.3	90	110			
L20592-01DUP	DUP	09/26/14 18:08			3.22	3.1	mg/L				3.8	20	RA
L20592-02AS	AS	09/26/14 18:43	WI140610-6	30	2.04	33	mg/L	103.2	90	110			
WG371920LFB2	LFB	09/27/14 1:54	WI140610-6	30		31.6	mg/L	105.3	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04678	mg/L	93.6	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04811	mg/L	96.1	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	U	.04605	mg/L	92	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	U	.04765	mg/L	95.2	70	130	3.42	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04908	mg/L	98.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.0502	mg/L	100.3	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.0012	.04984	mg/L	97.2	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.0012	.04942	mg/L	96.3	70	130	0.85	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05077	mg/L	101.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05042	mg/L	100.7	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	.00218	.05151	mg/L	98.6	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	.00218	.05187	mg/L	99.3	70	130	0.7	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0518	mg/L	103.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04982	mg/L	99.5	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.02356	.07149	mg/L	95.8	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.02356	.07147	mg/L	95.7	70	130	0.03	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
L20603-02DUP	DUP	09/22/14 16:44			1260	1260	umhos/cm				0	20	
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04727	mg/L	94.5	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05		.0474	mg/L	94.8	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05	.0217	.06642	mg/L	89.4	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05	.0217	.06835	mg/L	93.3	70	130	2.86	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04956	mg/L	99.1	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05059	mg/L	101.2	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05	.0218	.07014	mg/L	96.7	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05	.0218	.06985	mg/L	96.1	70	130	0.41	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20589-01DUP	DUP	09/26/14 20:42			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 20:43	WI140918-4	.2	U	.1455	mg/L	72.8	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20589-01DUP	DUP	09/26/14 21:48			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 21:49	WI140918-6	.2	U	.1808	mg/L	90.4	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	4.02		3.76	mg/L	93.5	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-0.15	0.15			
WG371821													
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	1.5		1.56	mg/L	104	90	110			
L20657-07DUP	DUP	09/26/14 4:03			.6	.61	mg/L				1.7	20	RA
L20657-09AS	AS	09/26/14 4:39	WI140610-6	7.5	U	8.08	mg/L	107.7	90	110			
WG371821LFB1	LFB	09/26/14 11:29	WI140610-6	1.5		1.52	mg/L	101.3	90	110			
WG371920													
L20592-01DUP	DUP	09/26/14 18:08			.39	.39	mg/L				0	20	RA
L20592-02AS	AS	09/26/14 18:43	WI140610-6	1.5	U	1.73	mg/L	115.3	90	110			M1
WG371920LFB2	LFB	09/27/14 1:54	WI140610-6	1.5		1.58	mg/L	105.3	90	110			
WG371920LFB1	LFB	09/29/14 13:14	WI140610-6	1.5		1.5	mg/L	100	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.05	mg/L	102.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.001		1.01	mg/L	100.9	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.001	U	1.07	mg/L	106.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.001	U	1.1	mg/L	109.9	85	115	2.76	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	1.001	U	1.02	mg/L	101.9	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	1.001	U	1.02	mg/L	101.9	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.07	mg/L	103.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.001		1.06	mg/L	105.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.001	U	1.06	mg/L	105.9	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.001	U	1.05	mg/L	104.9	70	130	0.95	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371625													
WG371625ICV	ICV	09/23/14 10:55	II140917-1	2		1.975	mg/L	98.8	95	105			
WG371625ICB	ICB	09/23/14 11:01				U	mg/L		-0.06	0.06			
WG371625LFB	LFB	09/23/14 11:14	II140904-2	1.0014		1.042	mg/L	104.1	85	115			
L20587-01AS	AS	09/23/14 11:20	II140904-2	5.007	6	11.01	mg/L	102.1	85	115			
L20587-01ASD	ASD	09/23/14 11:23	II140904-2	5.007	6	11.04	mg/L	102.7	85	115	0.27	20	
L20600-01AS	AS	09/23/14 12:07	II140904-2	1.0014	U	1.007	mg/L	100.6	85	115			
L20600-01ASD	ASD	09/23/14 12:11	II140904-2	1.0014	U	1.041	mg/L	104	85	115	3.32	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.99	mg/L	99.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.06	0.06			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.044	0.044			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0014		1.048	mg/L	104.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0014	U	1.047	mg/L	104.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0014	U	1.042	mg/L	104.1	70	130	0.48	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05085	mg/L	101.7	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04893	mg/L	97.8	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	U	.04805	mg/L	96	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	U	.0484	mg/L	96.7	70	130	0.73	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05146	mg/L	102.9	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04922	mg/L	98.3	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.0005	.05057	mg/L	100	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.0005	.05025	mg/L	99.4	70	130	0.63	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.0082	mg/L	100.4	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.024	0.024			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.002		1.002	mg/L	100	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.002	.019	1.072	mg/L	105.1	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.002	.019	1.079	mg/L	105.8	85	115	0.65	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	1.002	.01	1.037	mg/L	102.5	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	1.002	.01	1.018	mg/L	100.6	85	115	1.85	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.031	mg/L	101.6	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.024	0.024			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.0176	0.0176			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.002		1.02	mg/L	101.8	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.002	.034	1.072	mg/L	103.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.002	.034	1.075	mg/L	103.9	70	130	0.28	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		96.9	mg/L	96.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				.24	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	50.00283		49.01	mg/L	98	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	50.00283	493	525.8	mg/L	65.6	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	50.00283	493	528.5	mg/L	71	85	115	0.51	20	M3
L20593-01AS	AS	09/22/14 18:02	II140904-2	50.00283	1.4	51.7	mg/L	100.6	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	50.00283	1.4	50.94	mg/L	99.1	85	115	1.48	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		96.88	mg/L	96.9	95	105			
WG371877ICB	ICB	09/26/14 13:25				.31	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				.31	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	50.00283		49.17	mg/L	98.3	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	50.00283	10.2	59.91	mg/L	99.4	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	50.00283	10.2	59.73	mg/L	99.1	70	130	0.3	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05071	mg/L	101.4	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0501		.05002	mg/L	99.8	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.0501	.0099	.05981	mg/L	99.6	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.0501	.0099	.05945	mg/L	98.9	70	130	0.6	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05132	mg/L	102.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.04918	mg/L	98.2	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.0501	14.7	14.73	mg/L	59.9	70	130			M3
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.0501	14.7	14.75	mg/L	99.8	70	130	0.14	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
L20629-01MS	MS	09/30/14 10:50	HG140929-6	2	.5	2.64	ng/L	107	71	125			
L20629-01MSD	MSD	09/30/14 10:55	HG140929-6	2	.5	2.75	ng/L	112.5	71	125	4.08	24	
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372066													
WG372066CCV1	CCV	09/30/14 14:20	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG372066CCB1	CCB	09/30/14 14:25				U	ng/L		-0.5	0.5			
WG372066PQV	PQV	09/30/14 14:32	HG140929-5	.5		.51	ng/L	102	70	130			
WG372066LFB	LFB	09/30/14 14:37	HG140929-6	2		1.93	ng/L	96.5	71	125			
L20587-01MS	MS	09/30/14 14:47	HG140929-6	2	U	1.98	ng/L	99	71	125			
L20587-01MSD	MSD	09/30/14 14:52	HG140929-6	2	U	1.98	ng/L	99	71	125	0	24	
WG372066CCV2	CCV	09/30/14 15:28	HG140929-4	10		10.4	ng/L	104	76.5	123.4			
WG372066CCB2	CCB	09/30/14 15:33				U	ng/L		-0.5	0.5			
WG372066CCV3	CCV	09/30/14 16:21	HG140929-4	10		10.1	ng/L	101	76.5	123.4			
WG372066CCB3	CCB	09/30/14 16:26				U	ng/L		-0.5	0.5			
WG372066CCV4	CCV	09/30/14 17:11	HG140929-4	10		9.69	ng/L	96.9	76.5	123.4			
WG372066CCB4	CCB	09/30/14 17:16				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20590***

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.01998		.01946	mg/L	97.4	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0015	0.0015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0502		.04931	mg/L	98.2	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.0502	U	.04752	mg/L	94.7	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.0502	U	.04865	mg/L	96.9	70	130	2.35	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.01998		.01925	mg/L	96.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.05162	mg/L	102.8	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.0502	U	.05265	mg/L	104.9	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.0502	U	.05247	mg/L	104.5	70	130	0.34	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04838	mg/L	96.8	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0018	0.0018			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05		.049	mg/L	98	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05	.0021	.04844	mg/L	92.7	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05	.0021	.05022	mg/L	96.2	70	130	3.61	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05063	mg/L	101.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0018	0.0018			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00132	0.00132			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05119	mg/L	102.4	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05	.1242	.1738	mg/L	99.2	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05	.1242	.1732	mg/L	98	70	130	0.35	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371848													
WG371848ICV	ICV	09/25/14 20:42	WI140718-9	2.416		2.375	mg/L	98.3	90	110			
WG371848ICB	ICB	09/25/14 20:43				U	mg/L		-0.06	0.06			
WG371853													
WG371853LFB1	LFB	09/25/14 22:30	WI140719-4	2		1.916	mg/L	95.8	90	110			
WG371853LFB2	LFB	09/25/14 23:05	WI140719-4	2		1.859	mg/L	93	90	110			
L20590-01AS	AS	09/25/14 23:07	WI140719-4	2	U	1.85	mg/L	92.5	90	110			
L20590-02DUP	DUP	09/25/14 23:09			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L20590***

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371894													
WG371894ICV	ICV	09/26/14 11:59	WI131021-1	1.003		1.02	mg/L	101.7	90	110			
WG371894ICB	ICB	09/26/14 12:02				U	mg/L		-0.15	0.15			
WG371911													
WG371911LFB1	LFB	09/26/14 14:02	WI140113-8	1		.933	mg/L	93.3	90	110			
L20590-01AS	AS	09/26/14 14:04	WI140113-8	1	U	1.009	mg/L	100.9	90	110			
L20590-02DUP	DUP	09/26/14 14:06			U	U	mg/L				0	20	RA
WG371911LFB2	LFB	09/26/14 14:33	WI140113-8	1		.904	mg/L	90.4	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20603-02DUP	DUP	09/22/14 16:44			7.8	7.8	units				0	20	
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371852													
WG371852ICV	ICV	09/25/14 22:25	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG371852ICB	ICB	09/25/14 22:28				U	mg/L		-0.03	0.03			
WG371855													
WG371760LRB	LRB	09/25/14 23:13				U	mg/L		-0.03	0.03			
WG371760LFB	LFB	09/25/14 23:15	WI140918-1	.5		.469	mg/L	93.8	90	110			
L20579-01LFM	LFM	09/25/14 23:33	WI140918-1	.5	.05	.518	mg/L	93.6	90	110			
L20580-01DUP	DUP	09/25/14 23:35			.03	.025	mg/L				18.2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	20		19.71	mg/L	98.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	98.07852		98.91	mg/L	100.8	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	98.07852	1.9	105.4	mg/L	105.5	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	98.07852	1.9	106	mg/L	106.1	85	115	0.57	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	98.07852	1.6	103.3	mg/L	103.7	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	98.07852	1.6	101.7	mg/L	102.1	85	115	1.56	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	20		19.85	mg/L	99.3	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	98.07852		97.92	mg/L	99.8	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	98.07852	5.9	105.6	mg/L	101.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	98.07852	5.9	105.7	mg/L	101.8	70	130	0.09	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371462													
WG371462PBW	PBW	09/19/14 9:43				U	mg/L		-20	20			
WG371462LCSW	LCSW	09/19/14 9:48	PCN46226	260		252	mg/L	96.9	80	120			
L20598-04DUP	DUP	09/19/14 11:42			990	984	mg/L				0.6	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371481													
WG371481PBW	PBW	09/19/14 11:35				U	mg/L		-15	15			
WG371481LCSW	LCSW	09/19/14 11:40	PCN46226	160		154	mg/L	96.3	80	120			
L20595-01DUP	DUP	09/19/14 12:37			223	246	mg/L				9.8	10	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.01	mg/L	100.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.3	0.3			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.0009	U	1.08	mg/L	107.9	85	115	1.87	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	1.0009	U	1.09	mg/L	108.9	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115	2.79	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.01	mg/L	100.5	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.3	0.3			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.22	0.22			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.0009	U	1.07	mg/L	106.9	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.0009	U	1.07	mg/L	106.9	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05103	mg/L	102.1	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05015		.0518	mg/L	103.3	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05015	.0002	.05649	mg/L	112.2	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05015	.0002	.05398	mg/L	107.2	70	130	4.54	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05015		.05567	mg/L	111	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05015	.0005	.05159	mg/L	101.9	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05015	.0005	.05117	mg/L	101	70	130	0.82	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.02002		.02026	mg/L	101.2	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.00015	0.00015			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.01002		.009803	mg/L	97.8	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.01002	U	.009425	mg/L	94.1	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.01002	U	.009417	mg/L	94	70	130	0.08	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.01996	mg/L	99.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01002		.009891	mg/L	98.7	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.01002	U	.00941	mg/L	93.9	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.01002	U	.009437	mg/L	94.2	70	130	0.29	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	100		98.35	mg/L	98.4	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.6	0.6			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	100.0589		99.61	mg/L	99.6	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	100.0589	23.9	127.7	mg/L	103.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	100.0589	23.9	128.6	mg/L	104.6	85	115	0.7	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	100.0589	3.5	106.1	mg/L	102.5	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	100.0589	3.5	104.9	mg/L	101.3	85	115	1.14	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	100		98.39	mg/L	98.4	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.6	0.6			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.44	0.44			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	100.0589		97.65	mg/L	97.6	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	100.0589	23.2	123	mg/L	99.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	100.0589	23.2	123.2	mg/L	99.9	70	130	0.16	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.9702	mg/L	98.5	95	105			
WG371560ICB	ICB	09/22/14 16:57				.0064	mg/L		-0.015	0.015			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.5005		.5165	mg/L	103.2	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.5005	4.17	4.526	mg/L	71.1	85	115			M3
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.5005	4.17	4.524	mg/L	70.7	85	115	0.04	20	M3
L20593-01AS	AS	09/22/14 18:02	II140904-2	.5005	.046	.5718	mg/L	105.1	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	.5005	.046	.5665	mg/L	104	85	115	0.93	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.9762	mg/L	98.8	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.015	0.015			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.011	0.011			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.4955	mg/L	99	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	.217	.7257	mg/L	101.6	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	.217	.727	mg/L	101.9	70	130	0.18	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	50.05		46.7	mg/L	93.3	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG371821													
WG371821LFB2	LFB	09/26/14 0:28	WI140610-6	30		30.2	mg/L	100.7	90	110			
L20657-07DUP	DUP	09/26/14 4:03			760	762	mg/L				0.3	20	
L20657-09AS	AS	09/26/14 4:39	WI140610-6	150	176	330	mg/L	102.7	90	110			
WG371821LFB1	LFB	09/26/14 11:29	WI140610-6	30		30	mg/L	100	90	110			
WG371920													
L20592-01DUP	DUP	09/26/14 18:08			21.7	21.6	mg/L				0.5	20	
L20592-02AS	AS	09/26/14 18:43	WI140610-6	30	10.2	40.5	mg/L	101	90	110			
WG371920LFB2	LFB	09/27/14 1:54	WI140610-6	30		30.6	mg/L	102	90	110			
WG371920LFB1	LFB	09/29/14 13:14	WI140610-6	30		29.7	mg/L	99	90	110			

SPF Water Engineering

ACZ Project ID: ***L20590***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05295	mg/L	105.9	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.0502		.05173	mg/L	103	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.0502	U	.05002	mg/L	99.6	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.0502	U	.0504	mg/L	100.4	70	130	0.76	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05249	mg/L	105	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.0495	mg/L	98.6	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.0502	.0001	.05143	mg/L	102.3	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.0502	.0001	.05123	mg/L	101.9	70	130	0.39	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.0501		.04877	mg/L	97.3	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05005	mg/L	100	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	U	.04779	mg/L	95.5	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	U	.04784	mg/L	95.6	70	130	0.1	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.0501		.04973	mg/L	99.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05318	mg/L	106.3	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	U	.05204	mg/L	104	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	U	.05192	mg/L	103.7	70	130	0.23	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		2.0127	mg/L	100.6	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.015	0.015			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	1.005		1.017	mg/L	101.2	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	1.005	.006	1.03	mg/L	101.9	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	1.005	.006	1.042	mg/L	103.1	85	115	1.16	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	1.005	U	1.049	mg/L	104.4	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	1.005	U	1.038	mg/L	103.3	85	115	1.05	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		2.0372	mg/L	101.9	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.015	0.015			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.011	0.011			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	1.005		1.042	mg/L	103.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	1.005	U	1.047	mg/L	104.2	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	1.005	U	1.046	mg/L	104.1	70	130	0.1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.05209	mg/L	104.2	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0003	0.0003			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.05129	mg/L	102.5	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	.0003	.04958	mg/L	98.5	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	.0003	.05039	mg/L	100.1	70	130	1.62	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05186	mg/L	103.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05008	mg/L	100.1	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.001	.05324	mg/L	104.4	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.001	.05305	mg/L	104	70	130	0.36	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371851													
WG371851ICV	ICV	09/26/14 4:45	MS140723-1	.05		.04557	mg/L	91.1	90	110			
WG371851ICB	ICB	09/26/14 4:48				U	mg/L		-0.0006	0.0006			
WG371851LFB	LFB	09/26/14 4:51	MS140904-3	.05005		.04836	mg/L	96.6	85	115			
L20592-02AS	AS	09/26/14 5:51	MS140904-3	.05005	U	.04672	mg/L	93.3	70	130			
L20592-02ASD	ASD	09/26/14 5:54	MS140904-3	.05005	U	.04829	mg/L	96.5	70	130	3.3	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04674	mg/L	93.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04933	mg/L	98.6	85	115			
L20592-08LFM	LFM	10/01/14 0:54	MS140904-3	.05005	.0113	.06063	mg/L	98.6	70	130			
L20592-08LFMD	LFMD	10/01/14 0:57	MS140904-3	.05005	.0113	.05933	mg/L	96	70	130	2.17	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371560													
WG371560ICV	ICV	09/22/14 16:51	II140917-1	2		1.938	mg/L	96.9	95	105			
WG371560ICB	ICB	09/22/14 16:57				U	mg/L		-0.03	0.03			
WG371560LFB	LFB	09/22/14 17:09	II140904-2	.5005		.511	mg/L	102.1	85	115			
L20587-01AS	AS	09/22/14 17:15	II140904-2	.5005	U	.494	mg/L	98.7	85	115			
L20587-01ASD	ASD	09/22/14 17:19	II140904-2	.5005	U	.507	mg/L	101.3	85	115	2.6	20	
L20593-01AS	AS	09/22/14 18:02	II140904-2	.5005	.02	.541	mg/L	104.1	85	115			
L20593-01ASD	ASD	09/22/14 18:05	II140904-2	.5005	.02	.525	mg/L	100.9	85	115	3	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371877													
WG371877ICV	ICV	09/26/14 13:19	II140825-1	2		1.98	mg/L	99	95	105			
WG371877ICB	ICB	09/26/14 13:25				U	mg/L		-0.03	0.03			
WG371778LRB	LRB	09/26/14 13:37				U	mg/L		-0.022	0.022			
WG371778LFB	LFB	09/26/14 13:40	II140904-2	.5005		.514	mg/L	102.7	85	115			
L20589-01LFM	LFM	09/26/14 13:46	II140904-2	.5005	U	.514	mg/L	102.7	70	130			
L20589-01LFMD	LFMD	09/26/14 13:50	II140904-2	.5005	U	.515	mg/L	102.9	70	130	0.19	20	

SPF Water Engineering

ACZ Project ID: ***L20590***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20590-01	WG371560	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371560	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371821	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371821	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371853	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371911	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371855	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371462	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.

SPF Water Engineering ACZ Project ID: ***L20590***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20590-02	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371920	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371920	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371853	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371911	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371855	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371462	Residue, Filterable (TDS) @180C	SM2540C	RO	The duplicate originally assigned to this sample was not used for precision assessment because residue density exceeded the method limits. Another duplicate in the batch was used to assess precision. Method required duplicate frequency was not met.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20590
Date Received: 09/18/2014 10:01
Received By: mtb
Date Printed: 9/18/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20423	1.8	7	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20590

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson
Company: SPF Water Engineering
E-mail: jthompson@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name: SAME
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J Thompson Sampler's site Information State: ID Zip code 83706 Time Zone MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 3rd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	**Method 1631						
59763	9/15/14 13:43	GW	8	X							
59763-DUP	9/15/14 13:53	GW	8	X							
mercury trip blank	9/15/14 14:00	NA	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed
**Trip blank collected for mercury analysis per Method 1631

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9-17-14 7:00	[signature]	9-18-14 1000

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20590 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

Please Return Cooler ASAP to:

SPF Water Engineering
300 E. Mallard Dr., Suite 350
Boise, Idaho 83706

Call (208) 383-4140 with any questions.

Thanks,

Erik Boe

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 06, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20629

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 19, 2014. This project has been assigned to ACZ's project number, L20629. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20629. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 05, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 06, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20629

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on September 19, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20629. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20629. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L20629-01***
Date Sampled: *09/17/14 12:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:02	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:02	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 12:59	las
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:06	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L20629-01***
Date Sampled: *09/17/14 12:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 18:27	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:03	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:09	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 1:12	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0262			mg/L	0.0002	0.001	09/27/14 20:09	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0270			mg/L	0.0002	0.001	10/01/14 1:12	pmc
Barium, dissolved	M200.7 ICP	1	0.056			mg/L	0.003	0.02	09/23/14 18:27	jjc
Barium, total	M200.7 ICP	1	0.059			mg/L	0.003	0.02	09/29/14 10:03	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:09	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:12	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 18:27	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:03	aeb
Boron, dissolved	M200.7 ICP	1	0.09			mg/L	0.01	0.05	09/23/14 18:27	jjc
Boron, total	M200.7 ICP	1	0.09			mg/L	0.01	0.05	09/29/14 10:03	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:09	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:12	pmc
Calcium, dissolved	M200.7 ICP	1	54.6			mg/L	0.1	0.5	09/23/14 18:27	jjc
Calcium, total	M200.7 ICP	1	58.3			mg/L	0.1	0.5	09/29/14 10:03	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:09	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 1:12	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00039			mg/L	0.00005	0.0003	09/27/14 20:09	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00020	B		mg/L	0.00005	0.0003	10/01/14 1:12	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:09	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:12	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:27	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:03	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 18:27	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:03	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:09	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:12	pmc
Lithium, dissolved	M200.7 ICP	1	0.046			mg/L	0.008	0.04	09/23/14 18:27	jjc
Lithium, total	M200.7 ICP	1	0.052			mg/L	0.008	0.04	09/29/14 10:03	aeb
Magnesium, dissolved	M200.7 ICP	1	11.1			mg/L	0.2	1	09/23/14 18:27	jjc
Magnesium, total	M200.7 ICP	1	12.4			mg/L	0.2	1	09/29/14 10:03	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	09/27/14 20:09	pmc
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	10/01/14 1:12	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	09/30/14 10:45	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	09/30/14 16:31	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0029	B		mg/L	0.0005	0.003	09/27/14 20:09	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0005	0.003	10/01/14 1:12	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:09	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:12	pmc
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.2	1	09/23/14 18:27	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L20629-01***
Date Sampled: *09/17/14 12:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.2	1	09/29/14 10:03	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:27	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:03	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0045			mg/L	0.0001	0.0003	09/27/14 20:09	pmc
Selenium, total	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	10/01/14 1:12	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:09	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:12	pmc
Sodium, dissolved	M200.7 ICP	1	33.1			mg/L	0.2	1	09/23/14 18:27	jjc
Sodium, total	M200.7 ICP	1	34.8			mg/L	0.2	1	09/29/14 10:03	aeb
Strontium, dissolved	M200.7 ICP	1	0.253			mg/L	0.005	0.03	09/23/14 18:27	jjc
Strontium, total	M200.7 ICP	1	0.271			mg/L	0.005	0.03	09/29/14 10:03	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:09	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:12	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:09	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:12	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 18:27	jjc
Titanium, total	M200.7 ICP	1	0.008	B		mg/L	0.005	0.03	09/29/14 10:03	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0024			mg/L	0.0001	0.0005	09/27/14 20:09	pmc
Uranium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0005	10/01/14 1:12	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0380			mg/L	0.0002	0.001	09/27/14 20:09	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0399			mg/L	0.0002	0.001	10/01/14 1:12	pmc
Zinc, dissolved	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	09/23/14 18:27	jjc
Zinc, total	M200.7 ICP	1	0.02	B		mg/L	0.01	0.05	09/29/14 10:03	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: DEPOSIT STOCK TANK

ACZ Sample ID: ***L20629-01***
Date Sampled: *09/17/14 12:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	35.0			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	35.0		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	13.9			mg/L	0.5	2.5	09/29/14 20:21	jlf
Conductivity @25C	SM2510B	1	179		*	umhos/cm	1	10	09/22/14 20:42	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:50	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:53	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.46		*	mg/L	0.05	0.25	09/29/14 20:21	jlf
Hardness as CaCO3	SM2340B - Calculation		182			mg/L	0.8	4	10/06/14 8:54	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.03	B	*	mg/L	0.02	0.1	09/27/14 14:36	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 15:22	jlf
pH (lab)	SM4500H+ B									
pH		1	7.6	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.3			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/29/14 17:29	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	370			mg/L	10	20	09/23/14 10:58	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:43	djc
Sulfate	M300.0 - Ion Chromatography	1	40.6			mg/L	0.5	2.5	09/29/14 20:21	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L20629-02***
Date Sampled: *09/17/14 11:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:02	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:12	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:18	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 13:10	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L20629-02***
Date Sampled: *09/17/14 11:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 18:37	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:06	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:12	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 1:16	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0075			mg/L	0.0002	0.001	09/27/14 20:12	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0075			mg/L	0.0002	0.001	10/01/14 1:16	pmc
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	09/23/14 18:37	jjc
Barium, total	M200.7 ICP	1	0.026			mg/L	0.003	0.02	09/29/14 10:06	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:12	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:16	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 18:37	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:06	aeb
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	09/23/14 18:37	jjc
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	09/29/14 10:06	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:12	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:16	pmc
Calcium, dissolved	M200.7 ICP	1	48			mg/L	0.1	0.5	09/23/14 18:37	jjc
Calcium, total	M200.7 ICP	1	52			mg/L	0.1	0.5	09/29/14 10:06	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	09/27/14 20:12	pmc
Chromium, total	M200.8 ICP-MS	1	0.0012	B		mg/L	0.0005	0.002	10/01/14 1:16	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00022	B		mg/L	0.00005	0.0003	09/27/14 20:12	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00018	B		mg/L	0.00005	0.0003	10/01/14 1:16	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:12	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:16	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:37	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:06	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 18:37	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:06	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	09/27/14 20:12	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:16	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	09/23/14 18:37	jjc
Lithium, total	M200.7 ICP	1	0.020	B		mg/L	0.008	0.04	09/29/14 10:06	aeb
Magnesium, dissolved	M200.7 ICP	1	14.4			mg/L	0.2	1	09/23/14 18:37	jjc
Magnesium, total	M200.7 ICP	1	16.2			mg/L	0.2	1	09/29/14 10:06	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:12	pmc
Manganese, total	M200.8 ICP-MS	1	0.0010	B	*	mg/L	0.0005	0.003	10/01/14 1:16	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	09/30/14 11:10	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/30/14 16:36	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	09/27/14 20:12	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	10/01/14 1:16	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:12	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:16	pmc
Potassium, dissolved	M200.7 ICP	1	4.4			mg/L	0.2	1	09/23/14 18:37	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L20629-02***
Date Sampled: *09/17/14 11:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.7			mg/L	0.2	1	09/29/14 10:06	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:37	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:06	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0016			mg/L	0.0001	0.0003	09/27/14 20:12	pmc
Selenium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	10/01/14 1:16	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:12	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:16	pmc
Sodium, dissolved	M200.7 ICP	1	18.7			mg/L	0.2	1	09/23/14 18:37	jjc
Sodium, total	M200.7 ICP	1	19.9			mg/L	0.2	1	09/29/14 10:06	aeb
Strontium, dissolved	M200.7 ICP	1	0.243			mg/L	0.005	0.03	09/23/14 18:37	jjc
Strontium, total	M200.7 ICP	1	0.264			mg/L	0.005	0.03	09/29/14 10:06	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:12	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:16	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:12	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:16	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 18:37	jjc
Titanium, total	M200.7 ICP	1	0.009	B		mg/L	0.005	0.03	09/29/14 10:06	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	09/27/14 20:12	pmc
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	10/01/14 1:16	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0207			mg/L	0.0002	0.001	09/27/14 20:12	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0221			mg/L	0.0002	0.001	10/01/14 1:16	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 18:37	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:06	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT CORRAL SPRING

ACZ Sample ID: ***L20629-02***
Date Sampled: *09/17/14 11:40*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	182			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	182		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	12.7			mg/L	0.5	2.5	09/29/14 21:15	jlf
Conductivity @25C	SM2510B	1	424		*	umhos/cm	1	10	09/22/14 20:51	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:51	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:56	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.41		*	mg/L	0.05	0.25	09/29/14 21:15	jlf
Hardness as CaCO3	SM2340B - Calculation		179			mg/L	0.8	4	10/06/14 8:55	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.51		*	mg/L	0.02	0.1	09/27/14 14:39	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 15:25	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.7			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/29/14 17:32	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	09/23/14 11:03	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:45	djc
Sulfate	M300.0 - Ion Chromatography	1	22.6			mg/L	0.5	2.5	09/29/14 21:15	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT DUPLICATE

ACZ Sample ID: ***L20629-03***
Date Sampled: *09/17/14 11:50*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:02	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:21	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:29	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 13:21	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT DUPLICATE

ACZ Sample ID: ***L20629-03***
Date Sampled: *09/17/14 11:50*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 18:40	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:09	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:22	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 1:25	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0075			mg/L	0.0002	0.001	09/27/14 20:22	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0076			mg/L	0.0002	0.001	10/01/14 1:25	pmc
Barium, dissolved	M200.7 ICP	1	0.024			mg/L	0.003	0.02	09/23/14 18:40	jjc
Barium, total	M200.7 ICP	1	0.025			mg/L	0.003	0.02	09/29/14 10:09	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:22	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:25	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 18:40	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:09	aeb
Boron, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	09/23/14 18:40	jjc
Boron, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	09/29/14 10:09	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:22	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:25	pmc
Calcium, dissolved	M200.7 ICP	1	48.4			mg/L	0.1	0.5	09/23/14 18:40	jjc
Calcium, total	M200.7 ICP	1	51.2			mg/L	0.1	0.5	09/29/14 10:09	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	09/27/14 20:22	pmc
Chromium, total	M200.8 ICP-MS	1	0.0013	B		mg/L	0.0005	0.002	10/01/14 1:25	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00043			mg/L	0.00005	0.0003	09/27/14 20:22	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00019	B		mg/L	0.00005	0.0003	10/01/14 1:25	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:22	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:25	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:40	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:09	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 18:40	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:09	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:22	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:25	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	09/23/14 18:40	jjc
Lithium, total	M200.7 ICP	1	0.020	B		mg/L	0.008	0.04	09/29/14 10:09	aeb
Magnesium, dissolved	M200.7 ICP	1	14.6			mg/L	0.2	1	09/23/14 18:40	jjc
Magnesium, total	M200.7 ICP	1	16			mg/L	0.2	1	09/29/14 10:09	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.003	09/27/14 20:22	pmc
Manganese, total	M200.8 ICP-MS	1	0.0007	B	*	mg/L	0.0005	0.003	10/01/14 1:25	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1			ng/L	0.2	0.5	09/30/14 11:15	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/30/14 16:41	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	09/27/14 20:22	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	10/01/14 1:25	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:22	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:25	pmc
Potassium, dissolved	M200.7 ICP	1	4.5			mg/L	0.2	1	09/23/14 18:40	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT DUPLICATE

ACZ Sample ID: ***L20629-03***
Date Sampled: *09/17/14 11:50*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.6			mg/L	0.2	1	09/29/14 10:09	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 18:40	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:09	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	09/27/14 20:22	pmc
Selenium, total	M200.8 ICP-MS	1	0.0017			mg/L	0.0001	0.0003	10/01/14 1:25	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:22	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:25	pmc
Sodium, dissolved	M200.7 ICP	1	18.9			mg/L	0.2	1	09/23/14 18:40	jjc
Sodium, total	M200.7 ICP	1	19.5			mg/L	0.2	1	09/29/14 10:09	aeb
Strontium, dissolved	M200.7 ICP	1	0.246			mg/L	0.005	0.03	09/23/14 18:40	jjc
Strontium, total	M200.7 ICP	1	0.259			mg/L	0.005	0.03	09/29/14 10:09	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:22	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:25	pmc
Tin, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	09/27/14 20:22	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:25	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 18:40	jjc
Titanium, total	M200.7 ICP	1	0.008	B		mg/L	0.005	0.03	09/29/14 10:09	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	09/27/14 20:22	pmc
Uranium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0005	10/01/14 1:25	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0210			mg/L	0.0002	0.001	09/27/14 20:22	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0224			mg/L	0.0002	0.001	10/01/14 1:25	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 18:40	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:09	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: GOVERNMENT DUPLICATE

ACZ Sample ID: ***L20629-03***
Date Sampled: *09/17/14 11:50*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	180			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	180		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	12.7			mg/L	0.5	2.5	09/29/14 21:33	jlf
Conductivity @25C	SM2510B	1	440		*	umhos/cm	1	10	09/22/14 21:00	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:52	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:56	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.41		*	mg/L	0.05	0.25	09/29/14 21:33	jlf
Hardness as CaCO3	SM2340B - Calculation		181			mg/L	0.8	4	10/06/14 8:55	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	2.51		*	mg/L	0.02	0.1	09/27/14 14:41	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 15:26	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.7			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/29/14 17:33	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	300			mg/L	10	20	09/23/14 11:08	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:51	djc
Sulfate	M300.0 - Ion Chromatography	1	22.6			mg/L	0.5	2.5	09/29/14 21:33	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20629***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
L20631-02DUP	DUP	09/22/14 21:48			U	U	mg/L				0	20	RA
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.996	mg/L	99.8	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.09	0.09			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.0015		1.069	mg/L	106.7	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.0015	U	1.05	mg/L	104.8	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.0015	U	1.072	mg/L	107	85	115	2.07	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.965	mg/L	98.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.09	0.09			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.066	0.066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0015		1.016	mg/L	101.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.02119	mg/L	105.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0012	0.0012			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01		.01008	mg/L	100.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01	U	.00995	mg/L	99.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01	U	.00984	mg/L	98.4	70	130	1.11	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.02015	mg/L	100.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0012	0.0012			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00088	0.00088			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01		.01066	mg/L	106.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.01	U	.01045	mg/L	104.5	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.01	U	.01048	mg/L	104.8	70	130	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05257	mg/L	105.1	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04753	mg/L	94.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	.0075	.05985	mg/L	104.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	.0075	.05988	mg/L	104.6	70	130	0.05	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05136	mg/L	102.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.0554	mg/L	110.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	.0011	.05227	mg/L	102.1	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	.0011	.05263	mg/L	102.9	70	130	0.69	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.9612	mg/L	98.1	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.009	0.009			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	.5		.5052	mg/L	101	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	.5	.056	.5471	mg/L	98.2	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	.5	.056	.557	mg/L	100.2	85	115	1.79	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.009	0.009			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0066	0.0066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5		.5021	mg/L	100.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5	.065	.5617	mg/L	99.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5	.065	.5705	mg/L	101.1	70	130	1.55	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04823	mg/L	96.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04668	mg/L	93.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04843	mg/L	96.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04746	mg/L	94.8	70	130	2.02	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04761	mg/L	95.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05194	mg/L	103.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.00107	.05145	mg/L	100.7	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.00107	.05099	mg/L	99.7	70	130	0.9	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.964	mg/L	98.2	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.12	0.12			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	.999		1.017	mg/L	101.8	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	.999	U	1.006	mg/L	100.7	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	.999	U	1.027	mg/L	102.8	85	115	2.07	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.976	mg/L	98.8	95	105			
WG371948ICB	ICB	09/29/14 9:38				.042	mg/L		-0.12	0.12			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.088	0.088			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.999		1.041	mg/L	104.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.999	U	1.078	mg/L	107.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.999	U	1.101	mg/L	110.2	70	130	2.11	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		2.025	mg/L	101.3	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.03	0.03			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	.5005		.527	mg/L	105.3	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	.5005	.09	.599	mg/L	101.7	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	.5005	.09	.612	mg/L	104.3	85	115	2.15	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.041	mg/L	102.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.524	mg/L	104.7	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.12	.632	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.12	.639	mg/L	103.7	70	130	1.1	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04928	mg/L	98.6	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04882	mg/L	97.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04896	mg/L	97.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.04725	mg/L	94.3	70	130	3.55	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0493	mg/L	98.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.05148	mg/L	102.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	U	.04977	mg/L	99.3	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	U	.04894	mg/L	97.7	70	130	1.68	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	100		99.3	mg/L	99.3	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.3	0.3			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	67.99189		71.26	mg/L	104.8	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	67.99189	54.6	124	mg/L	102.1	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	67.99189	54.6	125.7	mg/L	104.6	85	115	1.36	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		100.3	mg/L	100.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	67.99189		70.93	mg/L	104.3	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	67.99189	32.5	103.5	mg/L	104.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	67.99189	32.5	106.5	mg/L	108.8	70	130	2.86	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		31.1	mg/L	103.7	90	110			
L20504-01DUP	DUP	09/29/14 18:34			6.54	6.53	mg/L				0.2	20	
L20504-02AS	AS	09/29/14 19:09	WI140610-6	30	4.49	34.7	mg/L	100.7	90	110			
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		31	mg/L	103.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L20629***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05135	mg/L	102.7	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04716	mg/L	94.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0011	.04867	mg/L	95	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0011	.04862	mg/L	94.9	70	130	0.1	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04908	mg/L	98.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.0502	mg/L	100.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.04915	mg/L	98.2	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.0489	mg/L	97.7	70	130	0.51	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0526	mg/L	105.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.05064	mg/L	101.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.00022	.04897	mg/L	97.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.00022	.04725	mg/L	94	70	130	3.58	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0518	mg/L	103.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04982	mg/L	99.5	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.02016	.06823	mg/L	96	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.02016	.06753	mg/L	94.6	70	130	1.03	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20631-02DUP	DUP	09/22/14 21:48			1.4	1.2	umhos/cm				15.4	20	RA
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L20629***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04514	mg/L	90.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04574	mg/L	91.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.045	mg/L	90	70	130	1.63	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04956	mg/L	99.1	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05059	mg/L	101.2	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05	U	.04768	mg/L	95.4	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05	U	.04758	mg/L	95.2	70	130	0.21	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20589-01DUP	DUP	09/26/14 20:42			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 20:43	WI140918-4	.2	U	.1455	mg/L	72.8	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20589-01DUP	DUP	09/26/14 21:48			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 21:49	WI140918-6	.2	U	.1808	mg/L	90.4	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L20504-01DUP	DUP	09/29/14 18:34			.35	.43	mg/L				20.5	20	RA
L20504-02AS	AS	09/29/14 19:09	WI140610-6	1.5	.57	2.07	mg/L	100	90	110			
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	1.5		1.56	mg/L	104	90	110			

SPF Water Engineering

ACZ Project ID: ***L20629***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		2.03	mg/L	101.5	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.3	0.3			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.001		1.01	mg/L	100.9	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.001	U	1.03	mg/L	102.9	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.001	U	1.01	mg/L	100.9	85	115	1.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.05	mg/L	102.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.001		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.001	U	1.04	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.001	U	1.08	mg/L	107.9	70	130	3.77	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.953	mg/L	97.7	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.06	0.06			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.0014		1.03	mg/L	102.9	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.0014	U	1.005	mg/L	100.4	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.0014	U	1.022	mg/L	102.1	85	115	1.68	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.002	mg/L	100.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.06	0.06			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.044	0.044			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0014		1.055	mg/L	105.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0014	U	1.055	mg/L	105.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0014	U	1.091	mg/L	108.9	70	130	3.36	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.051	mg/L	102	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04825	mg/L	96.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0001	.0488	mg/L	97.3	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0001	.04748	mg/L	94.7	70	130	2.74	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05146	mg/L	102.9	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04922	mg/L	98.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.04987	mg/L	99.6	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.04971	mg/L	99.3	70	130	0.32	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.9805	mg/L	99	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.024	0.024			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.002		1.002	mg/L	100	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.002	.046	1.02	mg/L	97.2	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.002	.046	1.044	mg/L	99.6	85	115	2.33	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0112	mg/L	100.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.024	0.024			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0176	0.0176			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.002		1.053	mg/L	105.1	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.002	.018	1.084	mg/L	106.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.002	.018	1.109	mg/L	108.9	70	130	2.28	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	100		97.25	mg/L	97.3	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.6	0.6			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	50.00283		49.93	mg/L	99.9	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	50.00283	11.1	59.9	mg/L	97.6	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	50.00283	11.1	61.11	mg/L	100	85	115	2	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		97.62	mg/L	97.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	50.00283		50.08	mg/L	100.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	50.00283	8.6	58.66	mg/L	100.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	50.00283	8.6	59.95	mg/L	102.7	70	130	2.18	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05221	mg/L	104.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.05037	mg/L	100.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04944	mg/L	98.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.048	mg/L	95.8	70	130	2.96	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05132	mg/L	102.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.04918	mg/L	98.2	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	5.89	6.063	mg/L	345.3	70	130			M3
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	5.89	5.963	mg/L	145.7	70	130	1.66	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
L20629-01MS	MS	09/30/14 10:50	HG140929-6	2	.5	2.64	ng/L	107	71	125			
L20629-01MSD	MSD	09/30/14 10:55	HG140929-6	2	.5	2.75	ng/L	112.5	71	125	4.08	24	
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20629***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372066													
WG372066CCV1	CCV	09/30/14 14:20	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG372066CCB1	CCB	09/30/14 14:25				U	ng/L		-0.5	0.5			
WG372066PQV	PQV	09/30/14 14:32	HG140929-5	.5		.51	ng/L	102	70	130			
WG372066LFB	LFB	09/30/14 14:37	HG140929-6	2		1.93	ng/L	96.5	71	125			
WG372066CCV2	CCV	09/30/14 15:28	HG140929-4	10		10.4	ng/L	104	76.5	123.4			
WG372066CCB2	CCB	09/30/14 15:33				U	ng/L		-0.5	0.5			
L20612-01MS	MS	09/30/14 15:58	HG140929-6	2	2.6	4.46	ng/L	93	71	125			
L20612-01MSD	MSD	09/30/14 16:03	HG140929-6	2	2.6	4.37	ng/L	88.5	71	125	2.04	24	
WG372066CCV3	CCV	09/30/14 16:21	HG140929-4	10		10.1	ng/L	101	76.5	123.4			
WG372066CCB3	CCB	09/30/14 16:26				U	ng/L		-0.5	0.5			
WG372066CCV4	CCV	09/30/14 17:11	HG140929-4	10		9.69	ng/L	96.9	76.5	123.4			
WG372066CCB4	CCB	09/30/14 17:16				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.01998		.01915	mg/L	95.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.04792	mg/L	95.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	.0018	.05098	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	.0018	.04886	mg/L	93.7	70	130	4.25	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.01998		.01925	mg/L	96.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.05162	mg/L	102.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0502	U	.05235	mg/L	104.3	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0502	U	.05191	mg/L	103.4	70	130	0.84	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05094	mg/L	101.9	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0018	0.0018			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04555	mg/L	91.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04435	mg/L	88.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.04423	mg/L	88.5	70	130	0.27	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05063	mg/L	101.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0018	0.0018			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00132	0.00132			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05119	mg/L	102.4	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05	.0316	.08088	mg/L	98.6	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05	.0316	.08081	mg/L	98.4	70	130	0.09	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371943													
WG371943ICV	ICV	09/27/14 14:09	WI140718-9	2.416		2.267	mg/L	93.8	90	110			
WG371943ICB	ICB	09/27/14 14:10				U	mg/L		-0.06	0.06			
WG371943LFB1	LFB	09/27/14 14:14	WI140719-4	2		2.001	mg/L	100.1	90	110			
WG371943LFB2	LFB	09/27/14 14:48	WI140719-4	2		1.959	mg/L	98	90	110			
L20478-11AS	AS	09/27/14 15:04	WI140719-4	60	44.5	103.2	mg/L	97.8	90	110			
L20478-12DUP	DUP	09/27/14 15:09			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371894													
WG371894ICV	ICV	09/26/14 11:59	WI131021-1	1.003		1.02	mg/L	101.7	90	110			
WG371894ICB	ICB	09/26/14 12:02				U	mg/L		-0.15	0.15			
WG371914													
L20626-01AS	AS	09/26/14 15:16	WI140113-8	1	U	.99	mg/L	99	90	110			
L20627-01DUP	DUP	09/26/14 15:18			.2	.175	mg/L				13.3	20	RA
WG371914LFB	LFB	09/26/14 15:46	WI140113-8	1		.927	mg/L	92.7	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20631-02DUP	DUP	09/22/14 21:48			6	5.8	units				3.4	20	
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371991													
WG371991ICV	ICV	09/29/14 14:48	WI140923-3	.65228		.653	mg/L	100.1	90	110			
WG371991ICB	ICB	09/29/14 14:49				U	mg/L		-0.03	0.03			
WG372008													
WG371970LRB	LRB	09/29/14 17:06				U	mg/L		-0.03	0.03			
WG371970LFB	LFB	09/29/14 17:07	WI140918-1	.5		.48	mg/L	96	90	110			
L20626-01LFM	LFM	09/29/14 17:24	WI140918-1	.5	.03	.503	mg/L	94.6	90	110			
L20627-01DUP	DUP	09/29/14 17:26			.03	.032	mg/L				6.5	20	RA

SPF Water Engineering

ACZ Project ID: ***L20629***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	20		19.73	mg/L	98.7	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.6	0.6			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	98.07852		100.8	mg/L	102.8	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	98.07852	5.7	104.3	mg/L	100.5	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	98.07852	5.7	106.9	mg/L	103.2	85	115	2.46	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	20		19.85	mg/L	99.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	98.07852		99.96	mg/L	101.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	98.07852	4.6	104.9	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	98.07852	4.6	107	mg/L	104.4	70	130	1.98	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371610													
WG371610PBW	PBW	09/23/14 9:14				U	mg/L		-20	20			
WG371610LCSW	LCSW	09/23/14 9:19	PCN46227	260		258	mg/L	99.2	80	120			
L20593-04DUP	DUP	09/23/14 10:21			1260	1282	mg/L				1.7	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371645													
WG371645PBW	PBW	09/23/14 12:17				U	mg/L		-15	15			
WG371645LCSW	LCSW	09/23/14 12:19	PCN46227	160		164	mg/L	102.5	80	120			
L20629-02DUP	DUP	09/23/14 12:48			U	U	mg/L				0	10	RA
L20634-06DUP	DUP	09/23/14 13:17			19	17	mg/L				11.1	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.98	mg/L	99	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.3	0.3			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.0009		1.04	mg/L	103.9	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.0009	U	1.02	mg/L	101.9	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.0009	U	1.03	mg/L	102.9	85	115	0.98	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2	mg/L	100	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0009	U	1.06	mg/L	105.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0009	U	1.08	mg/L	107.9	70	130	1.87	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05058	mg/L	101.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05015		.04666	mg/L	93	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05015	.0016	.05263	mg/L	101.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05015	.0016	.05214	mg/L	100.8	70	130	0.94	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05015		.05567	mg/L	111	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05015	U	.04975	mg/L	99.2	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05015	U	.0501	mg/L	99.9	70	130	0.7	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.01987	mg/L	99.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01002		.009696	mg/L	96.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01002	U	.00921	mg/L	91.9	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01002	U	.008962	mg/L	89.4	70	130	2.73	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.01996	mg/L	99.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01002		.009891	mg/L	98.7	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.01002	U	.009508	mg/L	94.9	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.01002	U	.009463	mg/L	94.4	70	130	0.47	20	

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ACZ Project ID: ***L20629***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	100		98.63	mg/L	98.6	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.6	0.6			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	100.0589		101.1	mg/L	101	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	100.0589	33.1	131.2	mg/L	98	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	100.0589	33.1	134.2	mg/L	101	85	115	2.26	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		98.68	mg/L	98.7	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	100.0589		99.59	mg/L	99.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	100.0589	37.3	135.8	mg/L	98.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	100.0589	37.3	138.8	mg/L	101.4	70	130	2.18	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.9445	mg/L	97.2	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.015	0.015			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	.5005		.5124	mg/L	102.4	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	.5005	.253	.7473	mg/L	98.8	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	.5005	.253	.7602	mg/L	101.3	85	115	1.71	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.5128	mg/L	102.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.235	.7505	mg/L	103	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.235	.7647	mg/L	105.8	70	130	1.87	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		30.3	mg/L	101	90	110			
L20504-01DUP	DUP	09/29/14 18:34			25.4	25.3	mg/L				0.4	20	
L20504-02AS	AS	09/29/14 19:09	WI140610-6	30	17.2	46.6	mg/L	98	90	110			
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		30.1	mg/L	100.3	90	110			

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ACZ Project ID: ***L20629***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05364	mg/L	107.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	U	.0519	mg/L	103.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	U	.05085	mg/L	101.3	70	130	2.04	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05249	mg/L	105	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.0495	mg/L	98.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0502	.0001	.05121	mg/L	101.8	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0502	.0001	.05129	mg/L	102	70	130	0.16	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.0501		.04828	mg/L	96.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04891	mg/L	97.7	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04906	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04718	mg/L	94.3	70	130	3.91	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.0501		.04973	mg/L	99.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05318	mg/L	106.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.05462	mg/L	109.1	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.05258	mg/L	105.1	70	130	3.81	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.9882	mg/L	99.4	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.015	0.015			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	1.005		1.019	mg/L	101.4	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	1.005	U	1.004	mg/L	99.9	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	1.005	U	1.024	mg/L	101.9	85	115	1.97	20	

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ACZ Project ID: ***L20629***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0042	mg/L	100.2	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.005		1.074	mg/L	106.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.005	.005	1.079	mg/L	106.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.005	.005	1.108	mg/L	109.8	70	130	2.65	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0535	mg/L	107	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.0515	mg/L	102.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0018	.05522	mg/L	106.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0018	.05351	mg/L	103.3	70	130	3.15	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05186	mg/L	103.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05008	mg/L	100.1	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.05247	mg/L	104.8	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.05249	mg/L	104.9	70	130	0.04	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05049	mg/L	101	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04761	mg/L	95.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0207	.07023	mg/L	99	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0207	.07032	mg/L	99.1	70	130	0.13	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04674	mg/L	93.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04933	mg/L	98.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.0002	.0497	mg/L	98.9	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.0002	.04936	mg/L	98.2	70	130	0.69	20	

SPF Water Engineering

ACZ Project ID: ***L20629***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371666													
WG371666ICV	ICV	09/23/14 18:02	II140917-1	2		1.933	mg/L	96.7	95	105			
WG371666ICB	ICB	09/23/14 18:08				U	mg/L		-0.03	0.03			
WG371666LFB	LFB	09/23/14 18:21	II140904-2	.5005		.515	mg/L	102.9	85	115			
L20629-01AS	AS	09/23/14 18:30	II140904-2	.5005	.02	.524	mg/L	100.7	85	115			
L20629-01ASD	ASD	09/23/14 18:33	II140904-2	.5005	.02	.533	mg/L	102.5	85	115	1.7	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.009	mg/L	100.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.53	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.05	.57	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.05	.57	mg/L	103.9	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L20629***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20629-01	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372005	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371914	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L20629-02	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372005	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371914	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20629***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20629-03	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372005	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371914	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20629
Date Received: 09/19/2014 09:55
Received By: as
Date Printed: 9/22/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20440	0	6	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20629

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe
Company: SPF Water Engineering
E-mail: eboe@spfwater.com
Address: 300 E. Mallard Dr., Ste 350
Boise, ID 83706
Telephone: 208-383-4140

Copy of Report to:

Name:
Company:
E-mail: SAME
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:
Address: SAME
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]
If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN
Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW
PO#: Calico 3rd Quarter 2014 Sampling
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Deposit Stock Tank	9/17/14 12:40	GW	8	X							
Government Corral Spring	9/17/14 11:40	GW	8	X							
Government Duplicate	9/17/14 11:50	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9/18/14 16:00	[signature]	9/19/14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20629 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

REPAD.09.06.05.01 S/ m D/ ## P/

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/11/2013

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 06, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20630

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 19, 2014. This project has been assigned to ACZ's project number, L20630. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20630. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 05, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 06, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20630

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on September 19, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20630. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20630. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L20630-01***
Date Sampled: *09/16/14 13:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		-						09/26/14 11:02	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:31	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:41	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 13:31	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L20630-01***
Date Sampled: *09/16/14 13:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:32	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:13	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0004	0.002	09/27/14 20:25	pmc
Antimony, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0004	0.002	10/01/14 1:28	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0854			mg/L	0.0002	0.001	09/27/14 20:25	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0860			mg/L	0.0002	0.001	10/01/14 1:28	pmc
Barium, dissolved	M200.7 ICP	1	0.045			mg/L	0.003	0.02	09/23/14 20:32	aeb
Barium, total	M200.7 ICP	1	0.047			mg/L	0.003	0.02	09/29/14 10:13	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:25	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:28	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:32	aeb
Bismuth, total	M200.7 ICP	1	0.04	B	*	mg/L	0.04	0.2	09/29/14 10:13	aeb
Boron, dissolved	M200.7 ICP	1	0.18			mg/L	0.01	0.05	09/23/14 20:32	aeb
Boron, total	M200.7 ICP	1	0.18			mg/L	0.01	0.05	09/29/14 10:13	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:25	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:28	pmc
Calcium, dissolved	M200.7 ICP	1	35.7			mg/L	0.1	0.5	09/23/14 20:32	aeb
Calcium, total	M200.7 ICP	1	36.7			mg/L	0.1	0.5	09/29/14 10:13	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:25	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 1:28	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00032			mg/L	0.00005	0.0003	09/27/14 20:25	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	10/01/14 1:28	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:25	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:28	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:32	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:13	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 20:32	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:13	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:25	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:28	pmc
Lithium, dissolved	M200.7 ICP	1	0.105			mg/L	0.008	0.04	09/23/14 20:32	aeb
Lithium, total	M200.7 ICP	1	0.113			mg/L	0.008	0.04	09/29/14 10:13	aeb
Magnesium, dissolved	M200.7 ICP	1	6			mg/L	0.2	1	09/23/14 20:32	aeb
Magnesium, total	M200.7 ICP	1	6.3			mg/L	0.2	1	09/29/14 10:13	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:25	pmc
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	10/01/14 1:28	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.9			ng/L	0.2	0.5	09/30/14 11:20	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 16:46	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0207			mg/L	0.0005	0.003	09/27/14 20:25	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0221			mg/L	0.0005	0.003	10/01/14 1:28	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:25	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:28	pmc
Potassium, dissolved	M200.7 ICP	1	6			mg/L	0.2	1	09/23/14 20:32	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L20630-01***
Date Sampled: *09/16/14 13:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6			mg/L	0.2	1	09/29/14 10:13	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:32	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:13	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020			mg/L	0.0001	0.0003	09/27/14 20:25	pmc
Selenium, total	M200.8 ICP-MS	1	0.0019			mg/L	0.0001	0.0003	10/01/14 1:28	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:25	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:28	pmc
Sodium, dissolved	M200.7 ICP	1	68.4			mg/L	0.2	1	09/23/14 20:32	aeb
Sodium, total	M200.7 ICP	1	70.3			mg/L	0.2	1	09/29/14 10:13	aeb
Strontium, dissolved	M200.7 ICP	1	0.151			mg/L	0.005	0.03	09/23/14 20:32	aeb
Strontium, total	M200.7 ICP	1	0.159			mg/L	0.005	0.03	09/29/14 10:13	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:25	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:28	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:25	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:28	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:32	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 10:13	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0053			mg/L	0.0001	0.0005	09/27/14 20:25	pmc
Uranium, total	M200.8 ICP-MS	1	0.0056			mg/L	0.0001	0.0005	10/01/14 1:28	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0208			mg/L	0.0002	0.001	09/27/14 20:25	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0228			mg/L	0.0002	0.001	10/01/14 1:28	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 20:32	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:13	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: WHISKEY SPRING

ACZ Sample ID: ***L20630-01***
Date Sampled: *09/16/14 13:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	142			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	142		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	2	6.03			mg/L	1	5	09/29/14 21:51	jlf
Conductivity @25C	SM2510B	1	549		*	umhos/cm	1	10	09/22/14 21:09	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:53	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:57	pjb
Fluoride	M300.0 - Ion Chromatography	2	0.69		*	mg/L	0.1	0.5	09/29/14 21:51	jlf
Hardness as CaCO3	SM2340B - Calculation		114			mg/L	0.8	4	10/06/14 9:01	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.18		*	mg/L	0.02	0.1	09/27/14 14:42	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/26/14 15:27	jlf
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.3			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	09/29/14 17:34	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	390			mg/L	10	20	09/22/14 12:39	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/22/14 14:36	abd
Sulfate	M300.0 - Ion Chromatography	2	118			mg/L	1	5	09/29/14 21:51	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L20630-02***
Date Sampled: *09/16/14 14:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:03	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:40	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:52	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 13:42	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L20630-02***
Date Sampled: *09/16/14 14:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:35	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:16	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:35	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 1:31	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0276			mg/L	0.0002	0.001	09/27/14 20:35	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0278			mg/L	0.0002	0.001	10/01/14 1:31	pmc
Barium, dissolved	M200.7 ICP	1	0.064			mg/L	0.003	0.02	09/23/14 20:35	aeb
Barium, total	M200.7 ICP	1	0.065			mg/L	0.003	0.02	09/29/14 10:16	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:35	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:31	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:35	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:16	aeb
Boron, dissolved	M200.7 ICP	1	0.11			mg/L	0.01	0.05	09/23/14 20:35	aeb
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	09/29/14 10:16	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:35	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:31	pmc
Calcium, dissolved	M200.7 ICP	1	31.4			mg/L	0.1	0.5	09/23/14 20:35	aeb
Calcium, total	M200.7 ICP	1	32.5			mg/L	0.1	0.5	09/29/14 10:16	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:35	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 1:31	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00033			mg/L	0.00005	0.0003	09/27/14 20:35	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00011	B		mg/L	0.00005	0.0003	10/01/14 1:31	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:35	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:31	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:35	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:16	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 20:35	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:16	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:35	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:31	pmc
Lithium, dissolved	M200.7 ICP	1	0.017	B		mg/L	0.008	0.04	09/23/14 20:35	aeb
Lithium, total	M200.7 ICP	1	0.018	B		mg/L	0.008	0.04	09/29/14 10:16	aeb
Magnesium, dissolved	M200.7 ICP	1	8.1			mg/L	0.2	1	09/23/14 20:35	aeb
Magnesium, total	M200.7 ICP	1	8.6			mg/L	0.2	1	09/29/14 10:16	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:35	pmc
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	10/01/14 1:31	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.1			ng/L	0.2	0.5	09/30/14 11:25	las
Mercury, total	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	09/30/14 16:51	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0036			mg/L	0.0005	0.003	09/27/14 20:35	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0038			mg/L	0.0005	0.003	10/01/14 1:31	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:35	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:31	pmc
Potassium, dissolved	M200.7 ICP	1	4.5			mg/L	0.2	1	09/23/14 20:35	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L20630-02***
Date Sampled: *09/16/14 14:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.6			mg/L	0.2	1	09/29/14 10:16	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:35	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:16	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	09/27/14 20:35	pmc
Selenium, total	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	10/01/14 1:31	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:35	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:31	pmc
Sodium, dissolved	M200.7 ICP	1	36			mg/L	0.2	1	09/23/14 20:35	aeb
Sodium, total	M200.7 ICP	1	37.3			mg/L	0.2	1	09/29/14 10:16	aeb
Strontium, dissolved	M200.7 ICP	1	0.224			mg/L	0.005	0.03	09/23/14 20:35	aeb
Strontium, total	M200.7 ICP	1	0.235			mg/L	0.005	0.03	09/29/14 10:16	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:35	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:31	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:35	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:31	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:35	aeb
Titanium, total	M200.7 ICP	1	0.005	B		mg/L	0.005	0.03	09/29/14 10:16	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0021			mg/L	0.0001	0.0005	09/27/14 20:35	pmc
Uranium, total	M200.8 ICP-MS	1	0.0023			mg/L	0.0001	0.0005	10/01/14 1:31	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0271			mg/L	0.0002	0.001	09/27/14 20:35	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0290			mg/L	0.0002	0.001	10/01/14 1:31	pmc
Zinc, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	09/23/14 20:35	aeb
Zinc, total	M200.7 ICP	1	0.05			mg/L	0.01	0.05	09/29/14 10:16	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: SOURDOUGH UPPER

ACZ Sample ID: ***L20630-02***
Date Sampled: *09/16/14 14:15*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	149			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	149		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	12.2			mg/L	0.5	2.5	09/29/14 22:09	jlf
Conductivity @25C	SM2510B	1	387		*	umhos/cm	1	10	09/22/14 21:17	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:55	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:58	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.44		*	mg/L	0.05	0.25	09/29/14 22:09	jlf
Hardness as CaCO3	SM2340B - Calculation		112			mg/L	0.8	4	10/06/14 9:01	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/27/14 14:43	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:36	tcd
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.1			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/29/14 17:35	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	260			mg/L	10	20	09/22/14 12:45	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/22/14 14:37	abd
Sulfate	M300.0 - Ion Chromatography	1	31.3			mg/L	0.5	2.5	09/29/14 22:09	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L20630-03***
Date Sampled: *09/16/14 16:25*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:03	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 14:50	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 11:27	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/29/14 13:53	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L20630-03***
Date Sampled: *09/16/14 16:25*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:38	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:31	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:38	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	10/01/14 1:35	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0340			mg/L	0.0002	0.001	09/27/14 20:38	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0343			mg/L	0.0002	0.001	10/01/14 1:35	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	09/23/14 20:38	aeb
Barium, total	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	09/29/14 10:31	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:38	pmc
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:35	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:38	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:31	aeb
Boron, dissolved	M200.7 ICP	1	0.12			mg/L	0.01	0.05	09/23/14 20:38	aeb
Boron, total	M200.7 ICP	1	0.12			mg/L	0.01	0.05	09/29/14 10:31	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:38	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:35	pmc
Calcium, dissolved	M200.7 ICP	1	1.1			mg/L	0.1	0.5	09/23/14 20:38	aeb
Calcium, total	M200.7 ICP	1	1.2			mg/L	0.1	0.5	09/29/14 10:31	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:38	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	10/01/14 1:35	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00030			mg/L	0.00005	0.0003	09/27/14 20:38	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:35	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:38	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	10/01/14 1:35	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:38	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:31	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 20:38	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:31	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:38	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:35	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	09/23/14 20:38	aeb
Lithium, total	M200.7 ICP	1	0.008	B		mg/L	0.008	0.04	09/29/14 10:31	aeb
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	09/23/14 20:38	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	09/29/14 10:31	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.003	09/27/14 20:38	pmc
Manganese, total	M200.8 ICP-MS	1	0.0008	B	*	mg/L	0.0005	0.003	10/01/14 1:35	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	09/30/14 11:30	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	09/30/14 16:56	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0152			mg/L	0.0005	0.003	09/27/14 20:38	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0161			mg/L	0.0005	0.003	10/01/14 1:35	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:38	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	10/01/14 1:35	pmc
Potassium, dissolved	M200.7 ICP	1	5.7			mg/L	0.2	1	09/23/14 20:38	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L20630-03***
Date Sampled: *09/16/14 16:25*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	6.1			mg/L	0.2	1	09/29/14 10:31	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:38	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:31	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/27/14 20:38	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	10/01/14 1:35	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:38	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	10/01/14 1:35	pmc
Sodium, dissolved	M200.7 ICP	1	105			mg/L	0.2	1	09/23/14 20:38	aeb
Sodium, total	M200.7 ICP	1	113			mg/L	0.2	1	09/29/14 10:31	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:38	aeb
Strontium, total	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	09/29/14 10:31	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:38	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:35	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:38	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/14 1:35	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:38	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 10:31	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:38	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	10/01/14 1:35	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/27/14 20:38	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0002	0.001	10/01/14 1:35	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 20:38	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:31	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: POISON SPRING

ACZ Sample ID: ***L20630-03***
Date Sampled: *09/16/14 16:25*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	115			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1	62.9			mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	178		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	8.67			mg/L	0.5	2.5	09/29/14 22:26	jlf
Conductivity @25C	SM2510B	1	500		*	umhos/cm	1	10	09/22/14 21:26	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:57	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:59	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.69			mg/L	0.05	0.25	09/29/14 22:26	jlf
Hardness as CaCO3	SM2340B - Calculation		4			mg/L	0.8	4	10/06/14 9:02	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/27/14 14:44	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:38	tcd
pH (lab)	SM4500H+ B									
pH		1	9.1	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.8			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	09/29/14 17:36	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	340			mg/L	10	20	09/22/14 12:50	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/22/14 14:38	abd
Sulfate	M300.0 - Ion Chromatography	1	56.1			mg/L	0.5	2.5	09/29/14 22:26	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20630***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
L20631-02DUP	DUP	09/22/14 21:48			U	U	mg/L				0	20	RA
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.031	mg/L	101.6	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.09	0.09			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0015		1.076	mg/L	107.4	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0015	U	1.071	mg/L	106.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0015	U	1.088	mg/L	108.6	85	115	1.57	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.965	mg/L	98.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.09	0.09			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.066	0.066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0015		1.016	mg/L	101.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.02119	mg/L	105.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0012	0.0012			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01		.01008	mg/L	100.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01	U	.00995	mg/L	99.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01	U	.00984	mg/L	98.4	70	130	1.11	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.02015	mg/L	100.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0012	0.0012			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00088	0.00088			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01		.01066	mg/L	106.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.01	U	.01045	mg/L	104.5	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.01	U	.01048	mg/L	104.8	70	130	0.29	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05257	mg/L	105.1	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04753	mg/L	94.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	.0075	.05985	mg/L	104.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	.0075	.05988	mg/L	104.6	70	130	0.05	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05136	mg/L	102.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.0554	mg/L	110.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	.0011	.05227	mg/L	102.1	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	.0011	.05263	mg/L	102.9	70	130	0.69	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.9945	mg/L	99.7	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.009	0.009			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5		.5134	mg/L	102.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5	.645	1.112	mg/L	93.4	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5	.645	1.127	mg/L	96.4	85	115	1.34	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.009	0.009			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0066	0.0066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5		.5021	mg/L	100.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5	.065	.5617	mg/L	99.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5	.065	.5705	mg/L	101.1	70	130	1.55	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04823	mg/L	96.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04668	mg/L	93.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04843	mg/L	96.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04746	mg/L	94.8	70	130	2.02	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04761	mg/L	95.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05194	mg/L	103.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.00107	.05145	mg/L	100.7	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.00107	.05099	mg/L	99.7	70	130	0.9	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.016	mg/L	100.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.12	0.12			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.999		1.042	mg/L	104.3	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.999	U	.996	mg/L	99.7	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.999	U	1.022	mg/L	102.3	85	115	2.58	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.976	mg/L	98.8	95	105			
WG371948ICB	ICB	09/29/14 9:38				.042	mg/L		-0.12	0.12			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.088	0.088			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.999		1.041	mg/L	104.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.999	U	1.078	mg/L	107.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.999	U	1.101	mg/L	110.2	70	130	2.11	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.062	mg/L	103.1	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.03	0.03			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.532	mg/L	106.3	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	U	.517	mg/L	103.3	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	U	.524	mg/L	104.7	85	115	1.34	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.041	mg/L	102.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.524	mg/L	104.7	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.12	.632	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.12	.639	mg/L	103.7	70	130	1.1	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04928	mg/L	98.6	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04882	mg/L	97.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04896	mg/L	97.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.04725	mg/L	94.3	70	130	3.55	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0493	mg/L	98.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.05148	mg/L	102.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	U	.04977	mg/L	99.3	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	U	.04894	mg/L	97.7	70	130	1.68	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		99.6	mg/L	99.6	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	67.99189		72.05	mg/L	106	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	67.99189	97.8	163.9	mg/L	97.2	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	67.99189	97.8	166.2	mg/L	100.6	85	115	1.39	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		100.3	mg/L	100.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	67.99189		70.93	mg/L	104.3	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	67.99189	32.5	103.5	mg/L	104.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	67.99189	32.5	106.5	mg/L	108.8	70	130	2.86	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		31.1	mg/L	103.7	90	110			
L20504-01DUP	DUP	09/29/14 18:34			6.54	6.53	mg/L				0.2	20	
L20504-02AS	AS	09/29/14 19:09	WI140610-6	30	4.49	34.7	mg/L	100.7	90	110			
L20630-03DUP	DUP	09/29/14 22:44			8.67	8.67	mg/L				0	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		31	mg/L	103.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	10.2	40.7	mg/L	101.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L20630***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05135	mg/L	102.7	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04716	mg/L	94.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0011	.04867	mg/L	95	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0011	.04862	mg/L	94.9	70	130	0.1	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04908	mg/L	98.2	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.0502	mg/L	100.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.04915	mg/L	98.2	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.0489	mg/L	97.7	70	130	0.51	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0526	mg/L	105.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.05064	mg/L	101.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.00022	.04897	mg/L	97.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.00022	.04725	mg/L	94	70	130	3.58	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.0518	mg/L	103.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04982	mg/L	99.5	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.02016	.06823	mg/L	96	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.02016	.06753	mg/L	94.6	70	130	1.03	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20631-02DUP	DUP	09/22/14 21:48			1.4	1.2	umhos/cm				15.4	20	RA
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L20630***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04514	mg/L	90.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04574	mg/L	91.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.045	mg/L	90	70	130	1.63	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04956	mg/L	99.1	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05059	mg/L	101.2	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05	U	.04768	mg/L	95.4	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05	U	.04758	mg/L	95.2	70	130	0.21	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20630-01DUP	DUP	09/26/14 20:54			U	U	mg/L				0	20	RA
L20630-02LFM	LFM	09/26/14 20:56	WI140918-4	.2	U	.1677	mg/L	83.9	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20589-01DUP	DUP	09/26/14 21:48			U	U	mg/L				0	20	RA
L20589-02LFM	LFM	09/26/14 21:49	WI140918-6	.2	U	.1808	mg/L	90.4	90	110			
L20750-02LFM	LFM	09/26/14 22:10	WI140918-6	.2	U	.1805	mg/L	90.3	90	110			
L20750-02DUP	DUP	09/26/14 22:11			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L20630***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L20504-01DUP	DUP	09/29/14 18:34			.35	.43	mg/L				20.5	20	RA
L20504-02AS	AS	09/29/14 19:09	WI140610-6	1.5	.57	2.07	mg/L	100	90	110			
L20630-03DUP	DUP	09/29/14 22:44			.69	.71	mg/L				2.9	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	1.5		1.56	mg/L	104	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	1.5	.37	1.91	mg/L	102.7	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.09	mg/L	104.5	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.001		1.04	mg/L	103.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.001	U	1.04	mg/L	103.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.001	U	1.02	mg/L	101.9	85	115	1.94	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.05	mg/L	102.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.001		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.001	U	1.04	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.001	U	1.08	mg/L	107.9	70	130	3.77	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.979	mg/L	99	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.06	0.06			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0014		1.048	mg/L	104.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0014	.09	1.095	mg/L	100.4	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0014	.09	1.11	mg/L	101.9	85	115	1.36	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.002	mg/L	100.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.06	0.06			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.044	0.044			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0014		1.055	mg/L	105.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0014	U	1.055	mg/L	105.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0014	U	1.091	mg/L	108.9	70	130	3.36	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.051	mg/L	102	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04825	mg/L	96.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0001	.0488	mg/L	97.3	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0001	.04748	mg/L	94.7	70	130	2.74	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05146	mg/L	102.9	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04922	mg/L	98.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.04987	mg/L	99.6	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.04971	mg/L	99.3	70	130	0.32	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.0262	mg/L	101.3	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.024	0.024			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.002		1.021	mg/L	101.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.002	.02	1.03	mg/L	100.8	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.002	.02	1.035	mg/L	101.3	85	115	0.48	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0112	mg/L	100.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.024	0.024			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0176	0.0176			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.002		1.053	mg/L	105.1	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.002	.018	1.084	mg/L	106.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.002	.018	1.109	mg/L	108.9	70	130	2.28	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		97.37	mg/L	97.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				.28	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	50.00283		50.02	mg/L	100	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	50.00283	21.9	70.14	mg/L	96.5	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	50.00283	21.9	71.28	mg/L	98.8	85	115	1.61	20	

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ACZ Project ID: ***L20630***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		97.62	mg/L	97.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	50.00283		50.08	mg/L	100.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	50.00283	8.6	58.66	mg/L	100.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	50.00283	8.6	59.95	mg/L	102.7	70	130	2.18	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05221	mg/L	104.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.05037	mg/L	100.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04944	mg/L	98.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.048	mg/L	95.8	70	130	2.96	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05132	mg/L	102.6	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0501		.04918	mg/L	98.2	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0501	5.89	6.063	mg/L	345.3	70	130			M3
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0501	5.89	5.963	mg/L	145.7	70	130	1.66	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG371649PQV	PQV	09/30/14 9:08	HG140929-5	.5		.48	ng/L	96	70	130			
WG371649LFB	LFB	09/30/14 9:14	HG140929-6	2		1.92	ng/L	96	71	125			
WG371649CCV1	CCV	09/30/14 10:04	HG140929-4	10		10.5	ng/L	105	76.5	123.4			
WG371649CCB1	CCB	09/30/14 10:09				U	ng/L		-0.5	0.5			
L20629-01MS	MS	09/30/14 10:50	HG140929-6	2	.5	2.64	ng/L	107	71	125			
L20629-01MSD	MSD	09/30/14 10:55	HG140929-6	2	.5	2.75	ng/L	112.5	71	125	4.08	24	
WG371649CCV2	CCV	09/30/14 11:00	HG140929-4	10		10.3	ng/L	103	76.5	123.4			
WG371649CCB2	CCB	09/30/14 11:05				U	ng/L		-0.5	0.5			
WG371649CCV3	CCV	09/30/14 11:35	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG371649CCB3	CCB	09/30/14 11:40				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20630***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372066													
WG372066CCV1	CCV	09/30/14 14:20	HG140929-4	10		10	ng/L	100	76.5	123.4			
WG372066CCB1	CCB	09/30/14 14:25				U	ng/L		-0.5	0.5			
WG372066PQV	PQV	09/30/14 14:32	HG140929-5	.5		.51	ng/L	102	70	130			
WG372066LFB	LFB	09/30/14 14:37	HG140929-6	2		1.93	ng/L	96.5	71	125			
WG372066CCV2	CCV	09/30/14 15:28	HG140929-4	10		10.4	ng/L	104	76.5	123.4			
WG372066CCB2	CCB	09/30/14 15:33				U	ng/L		-0.5	0.5			
L20612-01MS	MS	09/30/14 15:58	HG140929-6	2	2.6	4.46	ng/L	93	71	125			
L20612-01MSD	MSD	09/30/14 16:03	HG140929-6	2	2.6	4.37	ng/L	88.5	71	125	2.04	24	
WG372066CCV3	CCV	09/30/14 16:21	HG140929-4	10		10.1	ng/L	101	76.5	123.4			
WG372066CCB3	CCB	09/30/14 16:26				U	ng/L		-0.5	0.5			
WG372066CCV4	CCV	09/30/14 17:11	HG140929-4	10		9.69	ng/L	96.9	76.5	123.4			
WG372066CCB4	CCB	09/30/14 17:16				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.01998		.01915	mg/L	95.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.04792	mg/L	95.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	.0018	.05098	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	.0018	.04886	mg/L	93.7	70	130	4.25	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.01998		.01925	mg/L	96.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.05162	mg/L	102.8	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0502	U	.05235	mg/L	104.3	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0502	U	.05191	mg/L	103.4	70	130	0.84	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05094	mg/L	101.9	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0018	0.0018			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04555	mg/L	91.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04435	mg/L	88.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.04423	mg/L	88.5	70	130	0.27	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05063	mg/L	101.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0018	0.0018			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00132	0.00132			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05		.05119	mg/L	102.4	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05	.0316	.08088	mg/L	98.6	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05	.0316	.08081	mg/L	98.4	70	130	0.09	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371943													
WG371943ICV	ICV	09/27/14 14:09	WI140718-9	2.416		2.267	mg/L	93.8	90	110			
WG371943ICB	ICB	09/27/14 14:10				U	mg/L		-0.06	0.06			
WG371943LFB1	LFB	09/27/14 14:14	WI140719-4	2		2.001	mg/L	100.1	90	110			
WG371943LFB2	LFB	09/27/14 14:48	WI140719-4	2		1.959	mg/L	98	90	110			
L20478-11AS	AS	09/27/14 15:04	WI140719-4	60	44.5	103.2	mg/L	97.8	90	110			
L20478-12DUP	DUP	09/27/14 15:09			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371894													
WG371894ICV	ICV	09/26/14 11:59	WI131021-1	1.003		1.02	mg/L	101.7	90	110			
WG371894ICB	ICB	09/26/14 12:02				U	mg/L		-0.15	0.15			
WG371914													
L20626-01AS	AS	09/26/14 15:16	WI140113-8	1	U	.99	mg/L	99	90	110			
L20627-01DUP	DUP	09/26/14 15:18			.2	.175	mg/L				13.3	20	RA
WG371914LFB	LFB	09/26/14 15:46	WI140113-8	1		.927	mg/L	92.7	90	110			
WG372074													
WG372074ICV	ICV	09/30/14 15:28	WI131021-1	1.003		1.008	mg/L	100.5	90	110			
WG372074ICB	ICB	09/30/14 15:31				U	mg/L		-0.15	0.15			
WG372074LFB1	LFB	09/30/14 15:32	WI140113-8	1		.946	mg/L	94.6	90	110			
L20616-02DUP	DUP	09/30/14 15:34			U	U	mg/L				0	20	RA
L20630-02AS	AS	09/30/14 15:37	WI140113-8	1	U	.973	mg/L	97.3	90	110			
WG372074LFB2	LFB	09/30/14 16:04	WI140113-8	1		.986	mg/L	98.6	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20631-02DUP	DUP	09/22/14 21:48			6	5.8	units				3.4	20	
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

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ACZ Project ID: ***L20630***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371991													
WG371991ICV	ICV	09/29/14 14:48	WI140923-3	.65228		.653	mg/L	100.1	90	110			
WG371991ICB	ICB	09/29/14 14:49				U	mg/L		-0.03	0.03			
WG372008													
WG371970LRB	LRB	09/29/14 17:06				U	mg/L		-0.03	0.03			
WG371970LFB	LFB	09/29/14 17:07	WI140918-1	.5		.48	mg/L	96	90	110			
L20626-01LFM	LFM	09/29/14 17:24	WI140918-1	.5	.03	.503	mg/L	94.6	90	110			
L20627-01DUP	DUP	09/29/14 17:26			.03	.032	mg/L				6.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	20		19.88	mg/L	99.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	98.07852		100.6	mg/L	102.6	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	98.07852	2.1	101.3	mg/L	101.1	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	98.07852	2.1	102.7	mg/L	102.6	85	115	1.37	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	20		19.85	mg/L	99.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	98.07852		99.96	mg/L	101.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	98.07852	4.6	104.9	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	98.07852	4.6	107	mg/L	104.4	70	130	1.98	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371552													
WG371552PBW	PBW	09/22/14 11:32				U	mg/L		-20	20			
WG371552LCSW	LCSW	09/22/14 11:37	PCN46226	260		258	mg/L	99.2	80	120			
L20639-04DUP	DUP	09/22/14 13:31			190	196	mg/L				3.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371572													
WG371572PBW	PBW	09/22/14 14:20				U	mg/L		-15	15			
WG371572LCSW	LCSW	09/22/14 14:20	PCN46226	160		147	mg/L	91.9	80	120			
L20632-01DUP	DUP	09/22/14 14:39			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L20630***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.02	mg/L	101	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0009		1.08	mg/L	107.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2	mg/L	100	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0009	U	1.06	mg/L	105.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0009	U	1.08	mg/L	107.9	70	130	1.87	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05058	mg/L	101.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05015		.04666	mg/L	93	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05015	.0016	.05263	mg/L	101.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05015	.0016	.05214	mg/L	100.8	70	130	0.94	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05015		.05567	mg/L	111	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05015	U	.04975	mg/L	99.2	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05015	U	.0501	mg/L	99.9	70	130	0.7	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.01987	mg/L	99.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01002		.009696	mg/L	96.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01002	U	.00921	mg/L	91.9	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01002	U	.008962	mg/L	89.4	70	130	2.73	20	

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ACZ Project ID: ***L20630***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.02002		.01996	mg/L	99.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.00015	0.00015			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00011	0.00011			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.01002		.009891	mg/L	98.7	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.01002	U	.009508	mg/L	94.9	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.01002	U	.009463	mg/L	94.4	70	130	0.47	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		98.83	mg/L	98.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	100.0589		100.7	mg/L	100.6	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	100.0589	21	119.7	mg/L	98.6	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	100.0589	21	121.5	mg/L	100.4	85	115	1.49	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		98.68	mg/L	98.7	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	100.0589		99.59	mg/L	99.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	100.0589	37.3	135.8	mg/L	98.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	100.0589	37.3	138.8	mg/L	101.4	70	130	2.18	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.987	mg/L	99.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.015	0.015			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.5238	mg/L	104.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	.833	1.297	mg/L	92.7	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	.833	1.31	mg/L	95.3	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.5128	mg/L	102.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.235	.7505	mg/L	103	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.235	.7647	mg/L	105.8	70	130	1.87	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		30.3	mg/L	101	90	110			
L20504-01DUP	DUP	09/29/14 18:34			25.4	25.3	mg/L				0.4	20	
L20504-02AS	AS	09/29/14 19:09	WI140610-6	30	17.2	46.6	mg/L	98	90	110			
L20630-03DUP	DUP	09/29/14 22:44			56.1	55.7	mg/L				0.7	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		30.1	mg/L	100.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	16.8	47.2	mg/L	101.3	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05364	mg/L	107.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	U	.0519	mg/L	103.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	U	.05085	mg/L	101.3	70	130	2.04	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05249	mg/L	105	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.0502		.0495	mg/L	98.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.0502	.0001	.05121	mg/L	101.8	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.0502	.0001	.05129	mg/L	102	70	130	0.16	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.0501		.04828	mg/L	96.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04891	mg/L	97.7	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04906	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04718	mg/L	94.3	70	130	3.91	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.0501		.04973	mg/L	99.3	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05318	mg/L	106.3	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.05462	mg/L	109.1	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.05258	mg/L	105.1	70	130	3.81	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.024	mg/L	101.2	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.015	0.015			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.005		1.033	mg/L	102.8	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.005	U	1.016	mg/L	101.1	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.005	U	1.032	mg/L	102.7	85	115	1.56	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0042	mg/L	100.2	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.005		1.074	mg/L	106.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.005	.005	1.079	mg/L	106.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.005	.005	1.108	mg/L	109.8	70	130	2.65	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0535	mg/L	107	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.0515	mg/L	102.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0018	.05522	mg/L	106.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0018	.05351	mg/L	103.3	70	130	3.15	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.05186	mg/L	103.7	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0003	0.0003			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00022	0.00022			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.05008	mg/L	100.1	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	U	.05247	mg/L	104.8	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	U	.05249	mg/L	104.9	70	130	0.04	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05049	mg/L	101	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04761	mg/L	95.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0207	.07023	mg/L	99	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0207	.07032	mg/L	99.1	70	130	0.13	20	

SPF Water Engineering

ACZ Project ID: ***L20630***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372093													
WG372093ICV	ICV	10/01/14 0:05	MS140723-1	.05		.04674	mg/L	93.5	90	110			
WG372093ICB	ICB	10/01/14 0:08				U	mg/L		-0.0006	0.0006			
WG371951LRB	LRB	10/01/14 0:11				U	mg/L		-0.00044	0.00044			
WG371951LFB	LFB	10/01/14 0:14	MS140904-3	.05005		.04933	mg/L	98.6	85	115			
L20592-09LFM	LFM	10/01/14 1:03	MS140904-3	.05005	.0002	.0497	mg/L	98.9	70	130			
L20592-09LFMD	LFMD	10/01/14 1:06	MS140904-3	.05005	.0002	.04936	mg/L	98.2	70	130	0.69	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.956	mg/L	97.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.03	0.03			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.52	mg/L	103.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	U	.505	mg/L	100.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	U	.517	mg/L	103.3	85	115	2.35	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.009	mg/L	100.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.53	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.05	.57	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.05	.57	mg/L	103.9	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L20630***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20630-01	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372005	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371914	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371572	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L20630-02	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372005	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371572	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20630***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20630-03	WG372093	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371572	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20630
Date Received: 09/19/2014 09:56
Received By: as
Date Printed: 9/22/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20441	0	6	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20630

~~L20620~~ NRL 9-19-14

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 3rd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Whiskey Spring	9/16/14 13:15	GW	8	X							
Sourdough Upper	9/16/14 14:15	GW	8	X							
Poison Spring	9/16/14 16:25	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9/18/14 16:00	WPL	9-19-14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20630 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

REPAD.09.06.05.01 S/ m D/ ## P/

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 06, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20631

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 19, 2014. This project has been assigned to ACZ's project number, L20631. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20631. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 05, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

October 06, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20631

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from SPF Water Engineering on September 19, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20631. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20631. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L20631-01***
Date Sampled: *09/17/14 13:45*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:03	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:03	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 15:00	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 13:02	las
Total Hot Plate Digestion	M200.2 ICP								09/26/14 11:39	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L20631-01***
Date Sampled: *09/17/14 13:45*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/24/14 14:47	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:35	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:41	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/30/14 22:59	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0074			mg/L	0.0002	0.001	09/27/14 20:41	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0070			mg/L	0.0002	0.001	09/30/14 22:59	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	09/24/14 14:47	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	09/29/14 10:35	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:41	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/30/14 22:59	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 14:47	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:35	aeb
Boron, dissolved	M200.7 ICP	1	0.05			mg/L	0.01	0.05	09/24/14 14:47	jjc
Boron, total	M200.7 ICP	1	0.04	B		mg/L	0.01	0.05	09/29/14 10:35	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:41	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 22:59	pmc
Calcium, dissolved	M200.7 ICP	1	43.9			mg/L	0.1	0.5	09/24/14 14:47	jjc
Calcium, total	M200.7 ICP	1	46.9			mg/L	0.1	0.5	09/29/14 10:35	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	09/27/14 20:41	pmc
Chromium, total	M200.8 ICP-MS	1	0.0011	B		mg/L	0.0005	0.002	09/30/14 22:59	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	09/27/14 20:41	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00015	B		mg/L	0.00005	0.0003	09/30/14 22:59	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:41	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 22:59	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 14:47	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:35	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/24/14 14:47	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:35	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:41	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 22:59	pmc
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	09/24/14 14:47	jjc
Lithium, total	M200.7 ICP	1	0.020	B		mg/L	0.008	0.04	09/29/14 10:35	aeb
Magnesium, dissolved	M200.7 ICP	1	9.3			mg/L	0.2	1	09/24/14 14:47	jjc
Magnesium, total	M200.7 ICP	1	10.1			mg/L	0.2	1	09/29/14 10:35	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:41	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 22:59	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	10/01/14 11:43	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	10/01/14 13:42	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0018	B		mg/L	0.0005	0.003	09/27/14 20:41	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0019	B		mg/L	0.0005	0.003	09/30/14 22:59	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:41	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/30/14 22:59	pmc
Potassium, dissolved	M200.7 ICP	1	5			mg/L	0.2	1	09/24/14 14:47	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L20631-01***
Date Sampled: *09/17/14 13:45*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	5.3			mg/L	0.2	1	09/29/14 10:35	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 14:47	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:35	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0010			mg/L	0.0001	0.0003	09/27/14 20:41	pmc
Selenium, total	M200.8 ICP-MS	1	0.0009			mg/L	0.0001	0.0003	09/30/14 22:59	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:41	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 22:59	pmc
Sodium, dissolved	M200.7 ICP	1	19.1			mg/L	0.2	1	09/24/14 14:47	jjc
Sodium, total	M200.7 ICP	1	20.4			mg/L	0.2	1	09/29/14 10:35	aeb
Strontium, dissolved	M200.7 ICP	1	0.191			mg/L	0.005	0.03	09/24/14 14:47	jjc
Strontium, total	M200.7 ICP	1	0.207			mg/L	0.005	0.03	09/29/14 10:35	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:41	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 22:59	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:41	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/30/14 22:59	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 14:47	jjc
Titanium, total	M200.7 ICP	1	0.008	B		mg/L	0.005	0.03	09/29/14 10:35	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	09/27/14 20:41	pmc
Uranium, total	M200.8 ICP-MS	1	0.0035			mg/L	0.0001	0.0005	09/30/14 22:59	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0201			mg/L	0.0002	0.001	09/27/14 20:41	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0207			mg/L	0.0002	0.001	09/30/14 22:59	pmc
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	09/24/14 14:47	jjc
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	09/29/14 10:35	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: SAGEBRUSH SPRING

ACZ Sample ID: ***L20631-01***
Date Sampled: *09/17/14 13:45*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	159			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	159		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	10.2			mg/L	0.5	2.5	09/30/14 10:57	jlf
Conductivity @25C	SM2510B	1	388		*	umhos/cm	1	10	09/22/14 21:35	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 20:58	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 22:00	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.37			mg/L	0.05	0.25	09/30/14 10:57	jlf
Hardness as CaCO3	SM2340B - Calculation		148			mg/L	0.8	4	10/06/14 11:35	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	3.0		*	mg/L	0.02	0.1	09/27/14 14:45	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:39	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	19.9			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/29/14 17:37	mpb
Residue, Filterable (TDS) @180C	SM2540C	1	290			mg/L	10	20	09/23/14 11:13	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:53	djc
Sulfate	M300.0 - Ion Chromatography	1	16.8			mg/L	0.5	2.5	09/30/14 10:57	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L20631-02***
Date Sampled: *09/17/14 14:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:04	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:03	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 11:19	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 13:13	las
Total Hot Plate Digestion	M200.2 ICP								09/26/14 11:50	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L20631-02***
Date Sampled: *09/17/14 14:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/24/14 14:56	jjc
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 10:38	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:44	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/30/14 23:02	pmc
Arsenic, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/27/14 20:44	pmc
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/30/14 23:02	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	09/24/14 14:56	jjc
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	09/29/14 10:38	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:44	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/30/14 23:02	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/24/14 14:56	jjc
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 10:38	aeb
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 14:56	jjc
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:38	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:44	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:02	pmc
Calcium, dissolved	M200.7 ICP	1	0.1	B		mg/L	0.1	0.5	09/24/14 14:56	jjc
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	09/29/14 10:38	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:44	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/30/14 23:02	pmc
Cobalt, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:44	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:02	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:44	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:02	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 14:56	jjc
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:38	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/24/14 14:56	jjc
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 10:38	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:44	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:02	pmc
Lithium, dissolved	M200.7 ICP	1		U		mg/L	0.008	0.04	09/24/14 14:56	jjc
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	09/29/14 10:38	aeb
Magnesium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	09/24/14 14:56	jjc
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	09/29/14 10:38	aeb
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:44	pmc
Manganese, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:02	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.2	B		ng/L	0.2	0.5	10/01/14 11:59	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	10/01/14 13:47	las
Molybdenum, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:44	pmc
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:02	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:44	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/30/14 23:02	pmc
Potassium, dissolved	M200.7 ICP	1	0.2	B		mg/L	0.2	1	09/24/14 14:56	jjc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L20631-02***
Date Sampled: *09/17/14 14:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1		U		mg/L	0.2	1	09/29/14 10:38	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/24/14 14:56	jjc
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 10:38	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/27/14 20:44	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/30/14 23:02	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:44	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:02	pmc
Sodium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	09/24/14 14:56	jjc
Sodium, total	M200.7 ICP	1		U		mg/L	0.2	1	09/29/14 10:38	aeb
Strontium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 14:56	jjc
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 10:38	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:44	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:02	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:44	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/30/14 23:02	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/24/14 14:56	jjc
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 10:38	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:44	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:02	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/27/14 20:44	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0002	0.001	09/30/14 23:02	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/24/14 14:56	jjc
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 10:38	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: EQUIPMENT BLANK

ACZ Sample ID: ***L20631-02***
Date Sampled: *09/17/14 14:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1		U	*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	09/29/14 23:38	jlf
Conductivity @25C	SM2510B	1	1.4	B	*	umhos/cm	1	10	09/22/14 21:42	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:00	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 22:01	pjb
Fluoride	M300.0 - Ion Chromatography	1		U		mg/L	0.05	0.25	09/29/14 23:38	jlf
Hardness as CaCO3	SM2340B - Calculation		1.5	B		mg/L	0.8	4	10/06/14 11:35	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	09/27/14 14:46	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:40	tcd
pH (lab)	SM4500H+ B									
pH		1	6.0	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.3			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.01	0.05	09/30/14 22:25	pjb
Residue, Filterable (TDS) @180C	SM2540C	1		U		mg/L	10	20	09/23/14 9:26	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:56	djc
Sulfate	M300.0 - Ion Chromatography	1		U		mg/L	0.5	2.5	09/29/14 23:38	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L20631-03***
Date Sampled: *09/17/14 14:50*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1	0.7			ng/L	0.2	0.5	10/01/14 13:52	las

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	9.2	B		mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	9.2	B	*	mg/L	2	20	09/22/14 0:00	id
Conductivity @25C	SM2510B	1	1.1	B		umhos/cm	1	10	09/22/14 21:55	id
pH (lab)	SM4500H+ B									
pH		1	5.7	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.6			C	0.1	0.1	09/22/14 0:00	id
Residue, Filterable (TDS) @180C	SM2540C	1	10	B		mg/L	10	20	09/23/14 9:31	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 12:58	djc

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: MERCURY TRIP/TRANSFER

ACZ Sample ID: ***L20631-04***
Date Sampled: *09/17/14 14:55*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	10/01/14 12:04	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	10/01/14 13:57	las

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20631***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
L20631-02DUP	DUP	09/22/14 21:48			U	U	mg/L				0	20	RA
L20639-06DUP	DUP	09/22/14 22:59			U	U	mg/L				0	20	RA
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.032	mg/L	101.6	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.09	0.09			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.0015		1.053	mg/L	105.1	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.0015	U	1.258	mg/L	125.6	85	115			MA
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.0015	U	1.06	mg/L	105.8	85	115	17.08	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.965	mg/L	98.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.09	0.09			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.066	0.066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0015		1.016	mg/L	101.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0015	U	1.043	mg/L	104.1	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.02119	mg/L	105.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0012	0.0012			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01		.01008	mg/L	100.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01	U	.00995	mg/L	99.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01	U	.00984	mg/L	98.4	70	130	1.11	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.01	U	.01003	mg/L	100.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.01	U	.0102	mg/L	102	70	130	1.68	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.02002		.02026	mg/L	101.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0012	0.0012			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00088	0.00088			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.01		.01057	mg/L	105.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.01	U	.01067	mg/L	106.7	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.01	U	.01062	mg/L	106.2	70	130	0.47	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05257	mg/L	105.1	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04753	mg/L	94.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	.0075	.05985	mg/L	104.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	.0075	.05988	mg/L	104.6	70	130	0.05	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	U	.05427	mg/L	108.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	U	.05613	mg/L	112	70	130	3.37	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05235	mg/L	104.7	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0006	0.0006			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00044	0.00044			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.0563	mg/L	112.4	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	.0396	.08751	mg/L	95.6	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	.0396	.08948	mg/L	99.6	70	130	2.23	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		1.997	mg/L	99.9	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.009	0.009			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	.5		.4974	mg/L	99.5	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	.5	U	.5095	mg/L	101.9	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	.5	U	.4946	mg/L	98.9	85	115	2.97	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.009	0.009			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0066	0.0066			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5		.5021	mg/L	100.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5	.065	.5617	mg/L	99.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5	.065	.5705	mg/L	101.1	70	130	1.55	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04823	mg/L	96.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04668	mg/L	93.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04843	mg/L	96.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04746	mg/L	94.8	70	130	2.02	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04646	mg/L	92.8	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04623	mg/L	92.4	70	130	0.5	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04708	mg/L	94.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05041	mg/L	100.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.05075	mg/L	101.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.05075	mg/L	101.4	70	130	0	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.013	mg/L	100.7	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.12	0.12			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	.999		.981	mg/L	98.2	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	.999	U	1.016	mg/L	101.7	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	.999	U	.991	mg/L	99.2	85	115	2.49	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.976	mg/L	98.8	95	105			
WG371948ICB	ICB	09/29/14 9:38				.042	mg/L		-0.12	0.12			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.088	0.088			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.999		1.041	mg/L	104.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.999	U	1.078	mg/L	107.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.999	U	1.101	mg/L	110.2	70	130	2.11	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.083	mg/L	104.2	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.03	0.03			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	.5005		.52	mg/L	103.9	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	.5005	.05	.582	mg/L	106.3	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	.5005	.05	.564	mg/L	102.7	85	115	3.14	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.041	mg/L	102.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.524	mg/L	104.7	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.12	.632	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.12	.639	mg/L	103.7	70	130	1.1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04928	mg/L	98.6	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04882	mg/L	97.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04896	mg/L	97.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.04725	mg/L	94.3	70	130	3.55	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	.0003	.04899	mg/L	97.2	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	.0003	.04892	mg/L	97	70	130	0.14	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04998	mg/L	100	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.05152	mg/L	102.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	U	.04849	mg/L	96.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	U	.04869	mg/L	97.2	70	130	0.41	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	100		100.28	mg/L	100.3	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.3	0.3			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	67.99189		70.3	mg/L	103.4	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	67.99189	43.9	116	mg/L	106	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	67.99189	43.9	112.6	mg/L	101	85	115	2.97	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		100.3	mg/L	100.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	67.99189		70.93	mg/L	104.3	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	67.99189	32.5	103.5	mg/L	104.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	67.99189	32.5	106.5	mg/L	108.8	70	130	2.86	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		31.1	mg/L	103.7	90	110			
L20630-03DUP	DUP	09/29/14 22:44			8.67	8.67	mg/L				0	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		31	mg/L	103.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	10.2	40.7	mg/L	101.7	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05135	mg/L	102.7	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04716	mg/L	94.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0011	.04867	mg/L	95	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0011	.04862	mg/L	94.9	70	130	0.1	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04745	mg/L	94.8	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04894	mg/L	97.8	70	130	3.09	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04999	mg/L	100	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05087	mg/L	101.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0008	.0455	mg/L	89.3	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0008	.04602	mg/L	90.3	70	130	1.14	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0526	mg/L	105.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.05064	mg/L	101.2	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.00022	.04897	mg/L	97.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.00022	.04725	mg/L	94	70	130	3.58	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	.0008	.04967	mg/L	97.6	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	.0008	.04905	mg/L	96.4	70	130	1.26	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05253	mg/L	105.1	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05004	mg/L	100	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0001	.05069	mg/L	101.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0001	.05022	mg/L	100.1	70	130	0.93	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20631-02DUP	DUP	09/22/14 21:48			1.4	1.2	umhos/cm				15.4	20	RA
L20639-06DUP	DUP	09/22/14 22:59			400	403	umhos/cm				0.7	20	
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04514	mg/L	90.3	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04574	mg/L	91.5	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.045	mg/L	90	70	130	1.63	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05	.0007	.04422	mg/L	87	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05	.0007	.04557	mg/L	89.7	70	130	3.01	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05051	mg/L	101	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05		.05168	mg/L	103.4	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05	U	.04365	mg/L	87.3	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05	U	.04429	mg/L	88.6	70	130	1.46	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20630-01DUP	DUP	09/26/14 20:54			U	U	mg/L				0	20	RA
L20630-02LFM	LFM	09/26/14 20:56	WI140918-4	.2	U	.1677	mg/L	83.9	90	110			M2

SPF Water Engineering

ACZ Project ID: ***L20631***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20750-02LFM	LFM	09/26/14 22:10	WI140918-6	.2	U	.1805	mg/L	90.3	90	110			
L20750-02DUP	DUP	09/26/14 22:11			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L20630-03DUP	DUP	09/29/14 22:44			.69	.71	mg/L				2.9	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	1.5		1.56	mg/L	104	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	1.5	.37	1.91	mg/L	102.7	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.1	mg/L	105	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.3	0.3			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.001		1.01	mg/L	100.9	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.001	U	1.03	mg/L	102.9	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.001	U	.99	mg/L	98.9	85	115	3.96	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.05	mg/L	102.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.001		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.001	U	1.04	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.001	U	1.08	mg/L	107.9	70	130	3.77	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		1.982	mg/L	99.1	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.06	0.06			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.0014		1.02	mg/L	101.9	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.0014	U	1.045	mg/L	104.4	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.0014	U	.997	mg/L	99.6	85	115	4.7	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.002	mg/L	100.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.06	0.06			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.044	0.044			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0014		1.055	mg/L	105.4	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0014	U	1.055	mg/L	105.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0014	U	1.091	mg/L	108.9	70	130	3.36	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.051	mg/L	102	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04825	mg/L	96.4	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0001	.0488	mg/L	97.3	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0001	.04748	mg/L	94.7	70	130	2.74	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04883	mg/L	97.6	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04881	mg/L	97.5	70	130	0.04	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05285	mg/L	105.7	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05036	mg/L	100.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.05002	mg/L	99.9	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.04987	mg/L	99.6	70	130	0.3	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.028	mg/L	101.4	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.024	0.024			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.002		.9865	mg/L	98.5	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.002	.013	1.021	mg/L	100.6	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.002	.013	.9975	mg/L	98.3	85	115	2.33	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0112	mg/L	100.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.024	0.024			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.0176	0.0176			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.002		1.053	mg/L	105.1	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.002	.018	1.084	mg/L	106.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.002	.018	1.109	mg/L	108.9	70	130	2.28	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	100		97.83	mg/L	97.8	95	105			
WG371729ICB	ICB	09/24/14 14:16				.32	mg/L		-0.6	0.6			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	50.00283		48.78	mg/L	97.6	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	50.00283	9.3	59.21	mg/L	99.8	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	50.00283	9.3	57.69	mg/L	96.8	85	115	2.6	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		97.62	mg/L	97.6	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	50.00283		50.08	mg/L	100.2	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	50.00283	8.6	58.66	mg/L	100.1	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	50.00283	8.6	59.95	mg/L	102.7	70	130	2.18	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05221	mg/L	104.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.05037	mg/L	100.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0501	U	.04944	mg/L	98.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0501	U	.048	mg/L	95.8	70	130	2.96	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	.0368	.08386	mg/L	93.9	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	.0368	.08376	mg/L	93.7	70	130	0.12	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05209	mg/L	104.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.05019	mg/L	100.2	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	.002	.052	mg/L	99.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	.002	.05204	mg/L	99.9	70	130	0.08	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372105													
WG372105CCV1	CCV	10/01/14 11:23	HG140929-4	10		9.51	ng/L	95.1	76.5	123.4			
WG372105CCB1	CCB	10/01/14 11:28				U	ng/L		-0.5	0.5			
WG372105PQV	PQV	10/01/14 11:33	HG140929-5	.5		.57	ng/L	114	70	130			
WG372105LFB	LFB	10/01/14 11:38	HG140929-6	2		2.1	ng/L	105	71	125			
L20631-01MS	MS	10/01/14 11:48	HG140929-6	2	.2	2.11	ng/L	95.5	71	125			
L20631-01MSD	MSD	10/01/14 11:54	HG140929-6	2	.2	2.11	ng/L	95.5	71	125	0	24	
WG372105CCV2	CCV	10/01/14 12:24	HG140929-4	10		9.76	ng/L	97.6	76.5	123.4			
WG372105CCB2	CCB	10/01/14 12:29				U	ng/L		-0.5	0.5			
WG372105CCV3	CCV	10/01/14 13:20	HG140929-4	10		9.67	ng/L	96.7	76.5	123.4			
WG372105CCB3	CCB	10/01/14 13:25				U	ng/L		-0.5	0.5			

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372135													
WG372135CCV1	CCV	10/01/14 13:20	HG140929-4	10		9.67	ng/L	96.7	76.5	123.4			
WG372135CCB1	CCB	10/01/14 13:25				U	ng/L		-0.5	0.5			
WG372135PQV	PQV	10/01/14 13:32	HG140929-5	.5		.59	ng/L	118	70	130			
WG372135LFB	LFB	10/01/14 13:37	HG140929-6	2		2.09	ng/L	104.5	71	125			
L20632-01MS	MS	10/01/14 14:08	HG140929-6	2	.3	2.21	ng/L	95.5	71	125			
L20632-01MSD	MSD	10/01/14 14:13	HG140929-6	2	.3	2.28	ng/L	99	71	125	3.12	24	
WG372135CCV2	CCV	10/01/14 14:28	HG140929-4	10		9.45	ng/L	94.5	76.5	123.4			
WG372135CCB2	CCB	10/01/14 14:33				U	ng/L		-0.5	0.5			
WG372135CCV3	CCV	10/01/14 15:18	HG140929-4	10		9.48	ng/L	94.8	76.5	123.4			
WG372135CCB3	CCB	10/01/14 15:23				U	ng/L		-0.5	0.5			
WG372135CCV4	CCV	10/01/14 15:54	HG140929-4	10		9.31	ng/L	93.1	76.5	123.4			
WG372135CCB4	CCB	10/01/14 15:59				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.01998		.01915	mg/L	95.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.04792	mg/L	95.5	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	.0018	.05098	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	.0018	.04886	mg/L	93.7	70	130	4.25	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0502	.7978	.86	mg/L	123.9	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0502	.7978	.8483	mg/L	100.6	70	130	1.37	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.01998		.01934	mg/L	96.8	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0502	.0104	.06468	mg/L	108.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0502	.0104	.06506	mg/L	108.9	70	130	0.59	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05094	mg/L	101.9	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0018	0.0018			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04555	mg/L	91.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05	U	.04435	mg/L	88.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05	U	.04423	mg/L	88.5	70	130	0.27	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05	.0012	.04525	mg/L	88.1	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05	.0012	.04649	mg/L	90.6	70	130	2.7	20	

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05214	mg/L	104.3	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0018	0.0018			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00132	0.00132			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05		.05232	mg/L	104.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05	U	.0451	mg/L	90.2	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05	U	.04554	mg/L	91.1	70	130	0.97	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371943													
WG371943ICV	ICV	09/27/14 14:09	WI140718-9	2.416		2.267	mg/L	93.8	90	110			
WG371943ICB	ICB	09/27/14 14:10				U	mg/L		-0.06	0.06			
WG371943LFB1	LFB	09/27/14 14:14	WI140719-4	2		2.001	mg/L	100.1	90	110			
WG371943LFB2	LFB	09/27/14 14:48	WI140719-4	2		1.959	mg/L	98	90	110			
L20478-11AS	AS	09/27/14 15:04	WI140719-4	60	44.5	103.2	mg/L	97.8	90	110			
L20478-12DUP	DUP	09/27/14 15:09			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372074													
WG372074ICV	ICV	09/30/14 15:28	WI131021-1	1.003		1.008	mg/L	100.5	90	110			
WG372074ICB	ICB	09/30/14 15:31				U	mg/L		-0.15	0.15			
WG372074LFB1	LFB	09/30/14 15:32	WI140113-8	1		.946	mg/L	94.6	90	110			
L20616-02DUP	DUP	09/30/14 15:34			U	U	mg/L				0	20	RA
L20630-02AS	AS	09/30/14 15:37	WI140113-8	1	U	.973	mg/L	97.3	90	110			
WG372074LFB2	LFB	09/30/14 16:04	WI140113-8	1		.986	mg/L	98.6	90	110			

SPF Water Engineering

ACZ Project ID: ***L20631***

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20631-02DUP	DUP	09/22/14 21:48			6	5.8	units				3.4	20	
L20639-06DUP	DUP	09/22/14 22:59			4.1	4	units				2.5	20	
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371991													
WG371991ICV	ICV	09/29/14 14:48	WI140923-3	.65228		.653	mg/L	100.1	90	110			
WG371991ICB	ICB	09/29/14 14:49				U	mg/L		-0.03	0.03			
WG372008													
WG371970LRB	LRB	09/29/14 17:06				U	mg/L		-0.03	0.03			
WG371970LFB	LFB	09/29/14 17:07	WI140918-1	.5		.48	mg/L	96	90	110			
L20626-01LFM	LFM	09/29/14 17:24	WI140918-1	.5	.03	.503	mg/L	94.6	90	110			
L20627-01DUP	DUP	09/29/14 17:26			.03	.032	mg/L				6.5	20	RA
WG372098													
WG372098ICV	ICV	09/30/14 22:18	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG372098ICB	ICB	09/30/14 22:21				U	mg/L		-0.03	0.03			
WG371971LRB	LRB	09/30/14 22:22				U	mg/L		-0.03	0.03			
WG371971LFB	LFB	09/30/14 22:23	WI140918-1	.5		.465	mg/L	93	90	110			
L20631-02LFM	LFM	09/30/14 22:26	WI140918-1	.5	U	.467	mg/L	93.4	90	110			
L20632-01DUP	DUP	09/30/14 22:28			.03	.032	mg/L				6.5	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	20		19.96	mg/L	99.8	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.6	0.6			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	98.07852		98.24	mg/L	100.2	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	98.07852	5	105.8	mg/L	102.8	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	98.07852	5	103.5	mg/L	100.4	85	115	2.2	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	20		19.85	mg/L	99.3	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	98.07852		99.96	mg/L	101.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	98.07852	4.6	104.9	mg/L	102.3	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	98.07852	4.6	107	mg/L	104.4	70	130	1.98	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371610													
WG371610PBW	PBW	09/23/14 9:14				U	mg/L		-20	20			
WG371610LCSW	LCSW	09/23/14 9:19	PCN46227	260		258	mg/L	99.2	80	120			
L20593-04DUP	DUP	09/23/14 10:21			1260	1282	mg/L				1.7	10	
WG371611													
WG371611PBW	PBW	09/23/14 9:16				U	mg/L		-20	20			
WG371611LCSW	LCSW	09/23/14 9:21	PCN46227	260		252	mg/L	96.9	80	120			
L20650-08DUP	DUP	09/23/14 10:18			130	136	mg/L				4.5	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371645													
WG371645PBW	PBW	09/23/14 12:17				U	mg/L		-15	15			
WG371645LCSW	LCSW	09/23/14 12:19	PCN46227	160		164	mg/L	102.5	80	120			
L20634-06DUP	DUP	09/23/14 13:17			19	17	mg/L				11.1	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.03	mg/L	101.5	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.3	0.3			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.0009		1.05	mg/L	104.9	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.0009	U	1.04	mg/L	103.9	85	115	1.9	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2	mg/L	100	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.3	0.3			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.22	0.22			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.0009		1.06	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.0009	U	1.06	mg/L	105.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.0009	U	1.08	mg/L	107.9	70	130	1.87	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05058	mg/L	101.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05015		.04666	mg/L	93	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05015	.0016	.05263	mg/L	101.8	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05015	.0016	.05214	mg/L	100.8	70	130	0.94	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05015	.0002	.0564	mg/L	112.1	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05015	.0002	.05542	mg/L	110.1	70	130	1.75	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05064	mg/L	101.3	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05015		.05708	mg/L	113.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05015	.0039	.04922	mg/L	90.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05015	.0039	.04943	mg/L	90.8	70	130	0.43	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.01987	mg/L	99.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01002		.009696	mg/L	96.8	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.01002	U	.00921	mg/L	91.9	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.01002	U	.008962	mg/L	89.4	70	130	2.73	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.01002	U	.009146	mg/L	91.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.01002	U	.008853	mg/L	88.4	70	130	3.26	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.02002		.02018	mg/L	100.8	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.01002		.009901	mg/L	98.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.01002	U	.009509	mg/L	94.9	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.01002	U	.009477	mg/L	94.6	70	130	0.34	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	100		99.52	mg/L	99.5	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.6	0.6			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	100.0589		98.63	mg/L	98.6	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	100.0589	19.1	120.7	mg/L	101.5	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	100.0589	19.1	117.5	mg/L	98.3	85	115	2.69	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	100		98.68	mg/L	98.7	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.6	0.6			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.44	0.44			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	100.0589		99.59	mg/L	99.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	100.0589	37.3	135.8	mg/L	98.4	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	100.0589	37.3	138.8	mg/L	101.4	70	130	2.18	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		1.9848	mg/L	99.2	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.015	0.015			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	.5005		.5064	mg/L	101.2	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	.5005	.191	.7075	mg/L	103.2	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	.5005	.191	.6908	mg/L	99.9	85	115	2.39	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		1.981	mg/L	99.1	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.5128	mg/L	102.5	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.235	.7505	mg/L	103	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.235	.7647	mg/L	105.8	70	130	1.87	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		30.3	mg/L	101	90	110			
L20630-03DUP	DUP	09/29/14 22:44			56.1	55.7	mg/L				0.7	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		30.1	mg/L	100.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	16.8	47.2	mg/L	101.3	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05364	mg/L	107.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.0502	U	.0519	mg/L	103.4	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.0502	U	.05085	mg/L	101.3	70	130	2.04	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0502	U	.05247	mg/L	104.5	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0502	U	.05244	mg/L	104.5	70	130	0.06	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05328	mg/L	106.6	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0502		.04973	mg/L	99.1	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0502	U	.0516	mg/L	102.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0502	U	.05138	mg/L	102.4	70	130	0.43	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.0501		.04828	mg/L	96.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04891	mg/L	97.7	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	U	.04906	mg/L	98	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	U	.04718	mg/L	94.3	70	130	3.91	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.05089	mg/L	101.7	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.05001	mg/L	99.9	70	130	1.74	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.0501		.05006	mg/L	99.9	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05342	mg/L	106.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.0531	mg/L	106.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.05435	mg/L	108.6	70	130	2.33	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		2.0205	mg/L	101	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.015	0.015			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	1.005		1.002	mg/L	99.7	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	1.005	U	1.025	mg/L	102	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	1.005	U	.9975	mg/L	99.3	85	115	2.72	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.0042	mg/L	100.2	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.015	0.015			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.011	0.011			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	1.005		1.074	mg/L	106.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	1.005	.005	1.079	mg/L	106.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	1.005	.005	1.108	mg/L	109.8	70	130	2.65	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0535	mg/L	107	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.0515	mg/L	102.9	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0018	.05522	mg/L	106.7	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0018	.05351	mg/L	103.3	70	130	3.15	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	.0039	.05697	mg/L	106	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	.0039	.05664	mg/L	105.4	70	130	0.58	20	

SPF Water Engineering

ACZ Project ID: ***L20631***

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05202	mg/L	104	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05051	mg/L	100.9	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0034	.05463	mg/L	102.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0034	.0542	mg/L	101.5	70	130	0.79	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05049	mg/L	101	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04761	mg/L	95.1	85	115			
L20629-02AS	AS	09/27/14 20:16	MS140904-3	.05005	.0207	.07023	mg/L	99	70	130			
L20629-02ASD	ASD	09/27/14 20:19	MS140904-3	.05005	.0207	.07032	mg/L	99.1	70	130	0.13	20	
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.0499	mg/L	99.7	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.05099	mg/L	101.9	70	130	2.16	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04776	mg/L	95.5	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0006	0.0006			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00044	0.00044			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05093	mg/L	101.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0443	.09638	mg/L	104.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0443	.09825	mg/L	107.8	70	130	1.92	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371729													
WG371729ICV	ICV	09/24/14 14:10	II140917-1	2		1.97	mg/L	98.5	95	105			
WG371729ICB	ICB	09/24/14 14:16				U	mg/L		-0.03	0.03			
WG371729LFB	LFB	09/24/14 14:28	II140904-2	.5005		.506	mg/L	101.1	85	115			
L20631-01AS	AS	09/24/14 14:50	II140904-2	.5005	.02	.54	mg/L	105.9	85	115			
L20631-01ASD	ASD	09/24/14 14:53	II140904-2	.5005	.02	.519	mg/L	101.7	85	115	3.97	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371948													
WG371948ICV	ICV	09/29/14 9:32	II140825-1	2		2.009	mg/L	100.5	95	105			
WG371948ICB	ICB	09/29/14 9:38				U	mg/L		-0.03	0.03			
WG371860LRB	LRB	09/29/14 9:51				U	mg/L		-0.022	0.022			
WG371860LFB	LFB	09/29/14 9:54	II140904-2	.5005		.53	mg/L	105.9	85	115			
L20630-02LFM	LFM	09/29/14 10:19	II140904-2	.5005	.05	.57	mg/L	103.9	70	130			
L20630-02LFMD	LFMD	09/29/14 10:28	II140904-2	.5005	.05	.57	mg/L	103.9	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L20631***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20631-01	WG371729	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG372092	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372008	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L20631-02	WG371729	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG372092	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG371546	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371943	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372098	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Inorganic Extended Qualifier Report

SPF Water Engineering

ACZ Project ID: ***L20631***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20631-03	WG371645	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20631
Date Received: 09/19/2014 09:57
Received By: as
Date Printed: 9/19/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?		X	

L20631-03 : Green Filt-ac poured off of the Raw. Hg-1631D not received, analysis removed.

16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20442	0.4	7	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID:	L20631
Date Received:	09/19/2014 09:57
Received By:	as
Date Printed:	9/19/2014

L20631

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 3rd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ						
Sagebrush Spring	9/17/14 13:45	GW	8	X							
Equipment Blank	9/17/14 14:20	GW	8	X							
Transfer Blank	9/17/14 14:50	GW	8	X							
Mercury Trip/Transfer	9/17/14 14:55	GW	1		X						

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9/18/14 16:00	[signature]	9/19/14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20631 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

REPAD.09.06.05.01 S/ m D/ ## P/

Erik Boe
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300 E. Mallard Drive, Suite 350
Boise, ID 83706

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

October 06, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20632

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 19, 2014. This project has been assigned to ACZ's project number, L20632. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20632. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 05, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

SPF Water Engineering

October 06, 2014

Project ID: Calico 3rd Quarter 2
ACZ Project ID: L20632

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 3 ground water samples from SPF Water Engineering on September 19, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20632. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Some of the dissolved metals values exceed the corresponding total values for project L20632. This is a consistent anomaly with these sample types, and discrepancies may be attributed to a matrix or field sampling/filtering issue. In some cases, for RPDs that exceed the standard acceptance limit of 20%, analytes are measured at a value below the PQL or MDL; quantities with this qualifier (B) are considered estimated.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PROD-1

ACZ Sample ID: ***L20632-01***
Date Sampled: *09/16/14 17:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:04	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:03	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 11:38	mpb
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 13:24	las
Total Hot Plate Digestion	M200.2 ICP								09/26/14 9:43	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PROD-1

ACZ Sample ID: ***L20632-01***
Date Sampled: *09/16/14 17:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:41	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 12:11	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:47	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/30/14 23:05	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0624			mg/L	0.0002	0.001	09/27/14 20:47	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0579			mg/L	0.0002	0.001	09/30/14 23:05	pmc
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	09/23/14 20:41	aeb
Barium, total	M200.7 ICP	1	0.004	B		mg/L	0.003	0.02	09/29/14 12:11	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:47	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/30/14 23:05	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:41	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 14:39	aeb
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	09/23/14 20:41	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	09/29/14 12:11	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:47	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:05	pmc
Calcium, dissolved	M200.7 ICP	1	11.5			mg/L	0.1	0.5	09/23/14 20:41	aeb
Calcium, total	M200.7 ICP	1	11.9			mg/L	0.1	0.5	09/29/14 12:11	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:47	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/30/14 23:05	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00031			mg/L	0.00005	0.0003	09/27/14 20:47	pmc
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:05	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:47	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:05	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:41	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:11	aeb
Iron, dissolved	M200.7 ICP	1	0.05			mg/L	0.02	0.05	09/23/14 20:41	aeb
Iron, total	M200.7 ICP	1	0.05			mg/L	0.02	0.05	09/29/14 12:11	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:47	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:05	pmc
Lithium, dissolved	M200.7 ICP	1	0.156			mg/L	0.008	0.04	09/23/14 20:41	aeb
Lithium, total	M200.7 ICP	1	0.159			mg/L	0.008	0.04	09/29/14 12:11	aeb
Magnesium, dissolved	M200.7 ICP	1	0.5	B		mg/L	0.2	1	09/23/14 20:41	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	09/29/14 12:11	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0467			mg/L	0.0005	0.003	09/27/14 20:47	pmc
Manganese, total	M200.8 ICP-MS	1	0.0465			mg/L	0.0005	0.003	09/30/14 23:05	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	10/01/14 12:09	las
Mercury, total	M1631, Atomic Fluorescence	1	0.3	B		ng/L	0.2	0.5	10/01/14 14:03	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0080			mg/L	0.0005	0.003	09/27/14 20:47	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0081			mg/L	0.0005	0.003	09/30/14 23:05	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:47	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/30/14 23:05	pmc
Potassium, dissolved	M200.7 ICP	1	0.7	B		mg/L	0.2	1	09/23/14 20:41	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PROD-1

ACZ Sample ID: ***L20632-01***
Date Sampled: *09/16/14 17:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	0.6	B		mg/L	0.2	1	09/29/14 12:11	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:41	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:11	aeb
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/27/14 20:47	pmc
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	09/30/14 23:05	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:47	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:05	pmc
Sodium, dissolved	M200.7 ICP	1	129			mg/L	0.2	1	09/23/14 20:41	aeb
Sodium, total	M200.7 ICP	1	132			mg/L	0.2	1	09/29/14 12:11	aeb
Strontium, dissolved	M200.7 ICP	1	0.035			mg/L	0.005	0.03	09/23/14 20:41	aeb
Strontium, total	M200.7 ICP	1	0.041			mg/L	0.005	0.03	09/29/14 12:11	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:47	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:05	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:47	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/30/14 23:05	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:41	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 12:11	aeb
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:47	pmc
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:05	pmc
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	09/27/14 20:47	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0002	0.001	09/30/14 23:05	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 20:41	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 12:11	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2
Sample ID: PROD-1

ACZ Sample ID: ***L20632-01***
Date Sampled: *09/16/14 17:20*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	200			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1	6.0	B		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	206		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	21.2			mg/L	0.5	2.5	09/29/14 23:56	jlf
Conductivity @25C	SM2510B	1	629			umhos/cm	1	10	09/22/14 22:04	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:01	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 22:02	pjb
Fluoride	M300.0 - Ion Chromatography	1	1.04			mg/L	0.05	0.25	09/29/14 23:56	jlf
Hardness as CaCO3	SM2340B - Calculation		31			mg/L	0.8	4	10/06/14 11:41	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U		mg/L	0.02	0.1	09/27/14 14:49	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:41	tcd
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.8			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.03	B	*	mg/L	0.01	0.05	09/30/14 22:27	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	390			mg/L	10	20	09/22/14 12:55	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/22/14 14:39	abd
Sulfate	M300.0 - Ion Chromatography	1	75.6			mg/L	0.5	2.5	09/29/14 23:56	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L20632-02***
Date Sampled: *09/16/14 11:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:04	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:03	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 11:57	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 9:54	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 13:35	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L20632-02***
Date Sampled: *09/16/14 11:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:44	aeb
Aluminum, total	M200.7 ICP	1	0.30			mg/L	0.03	0.2	09/29/14 12:14	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:51	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/30/14 23:09	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0497			mg/L	0.0002	0.001	09/27/14 20:51	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0466			mg/L	0.0002	0.001	09/30/14 23:09	pmc
Barium, dissolved	M200.7 ICP	1	0.020			mg/L	0.003	0.02	09/23/14 20:44	aeb
Barium, total	M200.7 ICP	1	0.028			mg/L	0.003	0.02	09/29/14 12:14	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:51	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/30/14 23:09	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:44	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 14:42	aeb
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	09/23/14 20:44	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	09/29/14 12:14	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:51	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:09	pmc
Calcium, dissolved	M200.7 ICP	1	26.1			mg/L	0.1	0.5	09/23/14 20:44	aeb
Calcium, total	M200.7 ICP	1	27.1			mg/L	0.1	0.5	09/29/14 12:14	aeb
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/27/14 20:51	pmc
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	09/30/14 23:09	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00028	B		mg/L	0.00005	0.0003	09/27/14 20:51	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00027	B		mg/L	0.00005	0.0003	09/30/14 23:09	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:51	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:09	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:44	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:14	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 20:44	aeb
Iron, total	M200.7 ICP	1	0.30			mg/L	0.02	0.05	09/29/14 12:14	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:51	pmc
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	09/30/14 23:09	pmc
Lithium, dissolved	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	09/23/14 20:44	aeb
Lithium, total	M200.7 ICP	1	0.014	B		mg/L	0.008	0.04	09/29/14 12:14	aeb
Magnesium, dissolved	M200.7 ICP	1	14.7			mg/L	0.2	1	09/23/14 20:44	aeb
Magnesium, total	M200.7 ICP	1	15.9			mg/L	0.2	1	09/29/14 12:14	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.1613			mg/L	0.0005	0.003	09/27/14 20:51	pmc
Manganese, total	M200.8 ICP-MS	2	0.216			mg/L	0.001	0.005	10/03/14 0:23	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.5			ng/L	0.2	0.5	10/01/14 12:14	las
Mercury, total	M1631, Atomic Fluorescence	1	1.3			ng/L	0.2	0.5	10/01/14 14:18	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0085			mg/L	0.0005	0.003	09/27/14 20:51	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0091			mg/L	0.0005	0.003	09/30/14 23:09	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:51	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/30/14 23:09	pmc
Potassium, dissolved	M200.7 ICP	1	9.4			mg/L	0.2	1	09/23/14 20:44	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L20632-02***
Date Sampled: *09/16/14 11:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9.7			mg/L	0.2	1	09/29/14 12:14	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:44	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:14	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0001	0.0003	09/27/14 20:51	pmc
Selenium, total	M200.8 ICP-MS	1	0.0025			mg/L	0.0001	0.0003	09/30/14 23:09	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:51	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:09	pmc
Sodium, dissolved	M200.7 ICP	1	45.5			mg/L	0.2	1	09/23/14 20:44	aeb
Sodium, total	M200.7 ICP	1	47.3			mg/L	0.2	1	09/29/14 12:14	aeb
Strontium, dissolved	M200.7 ICP	1	0.139			mg/L	0.005	0.03	09/23/14 20:44	aeb
Strontium, total	M200.7 ICP	1	0.148			mg/L	0.005	0.03	09/29/14 12:14	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:51	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:09	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:51	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/30/14 23:09	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:44	aeb
Titanium, total	M200.7 ICP	1	0.016	B		mg/L	0.005	0.03	09/29/14 12:14	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0029			mg/L	0.0001	0.0005	09/27/14 20:51	pmc
Uranium, total	M200.8 ICP-MS	1	0.0030			mg/L	0.0001	0.0005	09/30/14 23:09	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0270			mg/L	0.0002	0.001	09/27/14 20:51	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0287			mg/L	0.0002	0.001	09/30/14 23:09	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 20:44	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 12:14	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS NORTH

ACZ Sample ID: ***L20632-02***
Date Sampled: *09/16/14 11:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	188			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	188		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	8.46			mg/L	0.5	2.5	09/30/14 0:50	jlf
Conductivity @25C	SM2510B	1	468			umhos/cm	1	10	09/22/14 22:13	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:02	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 22:03	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.66			mg/L	0.05	0.25	09/30/14 0:50	jlf
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	0.8	4	10/06/14 11:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.57			mg/L	0.02	0.1	09/27/14 14:53	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1	0.10	B	*	mg/L	0.05	0.2	09/30/14 15:42	tcd
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	21.1			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.17		*	mg/L	0.01	0.05	09/30/14 22:29	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	320			mg/L	10	20	09/22/14 13:00	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	30		*	mg/L	5	20	09/23/14 16:02	enb
Sulfate	M300.0 - Ion Chromatography	1	39.8			mg/L	0.5	2.5	09/30/14 0:50	jlf

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L20632-03***
Date Sampled: *09/16/14 12:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								09/26/14 11:04	tcd
Cyanide, WAD	SM4500-CN I- distillation								09/26/14 13:03	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								09/29/14 12:07	mpb
Total Hot Plate Digestion	M200.2 ICP								09/26/14 10:29	aeb
Total Hot Plate Digestion	M200.2 ICP-MS								09/30/14 13:46	las

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L20632-03***
Date Sampled: *09/16/14 12:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	09/23/14 20:47	aeb
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	09/29/14 12:24	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/27/14 20:54	pmc
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	09/30/14 23:18	pmc
Arsenic, dissolved	M200.8 ICP-MS	1	0.0418			mg/L	0.0002	0.001	09/27/14 20:54	pmc
Arsenic, total	M200.8 ICP-MS	1	0.0396			mg/L	0.0002	0.001	09/30/14 23:18	pmc
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	09/23/14 20:47	aeb
Barium, total	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	09/29/14 12:24	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:54	pmc
Beryllium, total	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/30/14 23:18	pmc
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/23/14 20:47	aeb
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/29/14 14:52	aeb
Boron, dissolved	M200.7 ICP	1	0.10			mg/L	0.01	0.05	09/23/14 20:47	aeb
Boron, total	M200.7 ICP	1	0.11			mg/L	0.01	0.05	09/29/14 12:24	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:54	pmc
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:18	pmc
Calcium, dissolved	M200.7 ICP	1	26.4			mg/L	0.1	0.5	09/23/14 20:47	aeb
Calcium, total	M200.7 ICP	1	26.5			mg/L	0.1	0.5	09/29/14 12:24	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0007	B		mg/L	0.0005	0.002	09/27/14 20:54	pmc
Chromium, total	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	09/30/14 23:18	pmc
Cobalt, dissolved	M200.8 ICP-MS	1	0.00034			mg/L	0.00005	0.0003	09/27/14 20:54	pmc
Cobalt, total	M200.8 ICP-MS	1	0.00010	B		mg/L	0.00005	0.0003	09/30/14 23:18	pmc
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/27/14 20:54	pmc
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	09/30/14 23:18	pmc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:47	aeb
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:24	aeb
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	09/23/14 20:47	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	09/29/14 12:24	aeb
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:54	pmc
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:18	pmc
Lithium, dissolved	M200.7 ICP	1	0.011	B		mg/L	0.008	0.04	09/23/14 20:47	aeb
Lithium, total	M200.7 ICP	1	0.013	B		mg/L	0.008	0.04	09/29/14 12:24	aeb
Magnesium, dissolved	M200.7 ICP	1	14.6			mg/L	0.2	1	09/23/14 20:47	aeb
Magnesium, total	M200.7 ICP	1	15.4			mg/L	0.2	1	09/29/14 12:24	aeb
Manganese, dissolved	M200.8 ICP-MS	1	0.0017	B		mg/L	0.0005	0.003	09/27/14 20:54	pmc
Manganese, total	M200.8 ICP-MS	1	0.0020	B		mg/L	0.0005	0.003	09/30/14 23:18	pmc
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	10/01/14 12:19	las
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	10/01/14 14:23	las
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0098			mg/L	0.0005	0.003	09/27/14 20:54	pmc
Molybdenum, total	M200.8 ICP-MS	1	0.0104			mg/L	0.0005	0.003	09/30/14 23:18	pmc
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/27/14 20:54	pmc
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	09/30/14 23:18	pmc
Potassium, dissolved	M200.7 ICP	1	8.9			mg/L	0.2	1	09/23/14 20:47	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L20632-03***
Date Sampled: *09/16/14 12:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	9			mg/L	0.2	1	09/29/14 12:24	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/23/14 20:47	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/29/14 12:24	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0044			mg/L	0.0001	0.0003	09/27/14 20:54	pmc
Selenium, total	M200.8 ICP-MS	1	0.0039			mg/L	0.0001	0.0003	09/30/14 23:18	pmc
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/27/14 20:54	pmc
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	09/30/14 23:18	pmc
Sodium, dissolved	M200.7 ICP	1	42			mg/L	0.2	1	09/23/14 20:47	aeb
Sodium, total	M200.7 ICP	1	42.6			mg/L	0.2	1	09/29/14 12:24	aeb
Strontium, dissolved	M200.7 ICP	1	0.146			mg/L	0.005	0.03	09/23/14 20:47	aeb
Strontium, total	M200.7 ICP	1	0.151			mg/L	0.005	0.03	09/29/14 12:24	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/27/14 20:54	pmc
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	09/30/14 23:18	pmc
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/27/14 20:54	pmc
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/30/14 23:18	pmc
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	09/23/14 20:47	aeb
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	09/29/14 12:24	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0005	09/27/14 20:54	pmc
Uranium, total	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	09/30/14 23:18	pmc
Vanadium, dissolved	M200.8 ICP-MS	1	0.0438			mg/L	0.0002	0.001	09/27/14 20:54	pmc
Vanadium, total	M200.8 ICP-MS	1	0.0443			mg/L	0.0002	0.001	09/30/14 23:18	pmc
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	09/23/14 20:47	aeb
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	09/29/14 12:24	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TWIN SPRINGS SOUTH

ACZ Sample ID: ***L20632-03***
Date Sampled: *09/16/14 12:00*
Date Received: *09/19/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	167			mg/L	2	20	09/22/14 0:00	id
Carbonate as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Hydroxide as CaCO3		1		U		mg/L	2	20	09/22/14 0:00	id
Total Alkalinity		1	167		*	mg/L	2	20	09/22/14 0:00	id
Chloride	M300.0 - Ion Chromatography	1	10.3			mg/L	0.5	2.5	09/30/14 1:08	jlf
Conductivity @25C	SM2510B	1	452			umhos/cm	1	10	09/22/14 22:22	id
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 21:03	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	09/26/14 22:03	pjb
Fluoride	M300.0 - Ion Chromatography	1	0.63			mg/L	0.05	0.25	09/30/14 1:08	jlf
Hardness as CaCO3	SM2340B - Calculation		126			mg/L	0.8	4	10/06/14 11:42	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.87			mg/L	0.02	0.1	09/27/14 14:56	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		U	*	mg/L	0.05	0.2	09/30/14 15:45	tcd
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	09/22/14 0:00	id
pH measured at		1	20.8			C	0.1	0.1	09/22/14 0:00	id
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.02	B	*	mg/L	0.01	0.05	09/30/14 22:30	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	310			mg/L	10	20	09/22/14 13:05	djc
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	09/23/14 16:04	enb
Sulfate	M300.0 - Ion Chromatography	1	42.0			mg/L	0.5	2.5	09/30/14 1:08	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L20632***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546PBW1	PBW	09/22/14 13:05				U	mg/L		-20	20			
WG371546LCSW3	LCSW	09/22/14 13:22	WC140910-	820.0001		794	mg/L	96.8	90	110			
WG371546LCSW6	LCSW	09/22/14 17:01	WC140910-	820.0001		806	mg/L	98.3	90	110			
WG371546PBW2	PBW	09/22/14 17:09				U	mg/L		-20	20			
WG371546LCSW9	LCSW	09/22/14 20:11	WC140910-	820.0001		810	mg/L	98.8	90	110			
WG371546PBW3	PBW	09/22/14 20:18				U	mg/L		-20	20			
L20639-06DUP	DUP	09/22/14 22:59			U	U	mg/L				0	20	RA
WG371546LCSW12	LCSW	09/22/14 23:17	WC140910-	820.0001		813	mg/L	99.1	90	110			
WG371546PBW4	PBW	09/22/14 23:24				U	mg/L		-20	20			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.031	mg/L	101.6	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.09	0.09			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0015		1.076	mg/L	107.4	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0015	U	1.071	mg/L	106.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0015	U	1.088	mg/L	108.6	85	115	1.57	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.992	mg/L	99.6	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.09	0.09			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.066	0.066			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.0015		1.061	mg/L	105.9	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.0015	.3	1.382	mg/L	108	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.0015	.3	1.386	mg/L	108.4	70	130	0.29	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.02119	mg/L	105.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0012	0.0012			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01		.01008	mg/L	100.8	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.01	U	.01003	mg/L	100.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.01	U	.0102	mg/L	102	70	130	1.68	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.02002		.02026	mg/L	101.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0012	0.0012			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00088	0.00088			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.01		.01057	mg/L	105.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.01	U	.01067	mg/L	106.7	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.01	U	.01062	mg/L	106.2	70	130	0.47	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05257	mg/L	105.1	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04753	mg/L	94.9	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	U	.05427	mg/L	108.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	U	.05613	mg/L	112	70	130	3.37	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05235	mg/L	104.7	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0006	0.0006			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00044	0.00044			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.0563	mg/L	112.4	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	.0396	.08751	mg/L	95.6	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	.0396	.08948	mg/L	99.6	70	130	2.23	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.9945	mg/L	99.7	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.009	0.009			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5		.5134	mg/L	102.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5	.645	1.112	mg/L	93.4	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5	.645	1.127	mg/L	96.4	85	115	1.34	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.9982	mg/L	99.9	95	105			
WG371949ICB	ICB	09/29/14 11:52				.0033	mg/L		-0.009	0.009			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.0066	0.0066			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	.5		.5221	mg/L	104.4	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	.5	.028	.5442	mg/L	103.2	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	.5	.028	.5395	mg/L	102.3	70	130	0.87	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04823	mg/L	96.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04668	mg/L	93.3	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04646	mg/L	92.8	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04623	mg/L	92.4	70	130	0.5	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04708	mg/L	94.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05041	mg/L	100.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.05075	mg/L	101.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.05075	mg/L	101.4	70	130	0	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.016	mg/L	100.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.12	0.12			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.999		1.042	mg/L	104.3	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.999	U	.996	mg/L	99.7	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.999	U	1.022	mg/L	102.3	85	115	2.58	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371989													
WG371989ICV	ICV	09/29/14 14:14	II140825-1	2		1.982	mg/L	99.1	95	105			
WG371989ICB	ICB	09/29/14 14:20				U	mg/L		-0.12	0.12			
WG371861LRB	LRB	09/29/14 14:33				U	mg/L		-0.088	0.088			
WG371861LFB	LFB	09/29/14 14:36	II140904-2	.999		1.009	mg/L	101	85	115			
L20632-02LFM	LFM	09/29/14 14:45	II140904-2	.999	U	1.033	mg/L	103.4	70	130			
L20632-02LFMD	LFMD	09/29/14 14:48	II140904-2	.999	U	.998	mg/L	99.9	70	130	3.45	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.062	mg/L	103.1	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.03	0.03			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.532	mg/L	106.3	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	U	.517	mg/L	103.3	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	U	.524	mg/L	104.7	85	115	1.34	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		2.006	mg/L	100.3	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.03	0.03			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.022	0.022			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	.5005		.521	mg/L	104.1	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	.5005	.11	.619	mg/L	101.7	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	.5005	.11	.619	mg/L	101.7	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.04928	mg/L	98.6	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.04882	mg/L	97.4	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	.0003	.04899	mg/L	97.2	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	.0003	.04892	mg/L	97	70	130	0.14	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04998	mg/L	100	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.05152	mg/L	102.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	U	.04849	mg/L	96.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	U	.04869	mg/L	97.2	70	130	0.41	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		99.6	mg/L	99.6	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	67.99189		72.05	mg/L	106	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	67.99189	97.8	163.9	mg/L	97.2	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	67.99189	97.8	166.2	mg/L	100.6	85	115	1.39	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	100		99.13	mg/L	99.1	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.3	0.3			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.22	0.22			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	67.99189		71.31	mg/L	104.9	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	67.99189	27.1	96.43	mg/L	102	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	67.99189	27.1	95.95	mg/L	101.3	70	130	0.5	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		31.1	mg/L	103.7	90	110			
L20630-03DUP	DUP	09/29/14 22:44			8.67	8.67	mg/L				0	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		31	mg/L	103.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	10.2	40.7	mg/L	101.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L20632***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05135	mg/L	102.7	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04716	mg/L	94.2	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04745	mg/L	94.8	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04894	mg/L	97.8	70	130	3.09	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04999	mg/L	100	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05087	mg/L	101.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0008	.0455	mg/L	89.3	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0008	.04602	mg/L	90.3	70	130	1.14	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0526	mg/L	105.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.05064	mg/L	101.2	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	.0008	.04967	mg/L	97.6	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	.0008	.04905	mg/L	96.4	70	130	1.26	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05253	mg/L	105.1	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05004	mg/L	100	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0001	.05069	mg/L	101.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0001	.05022	mg/L	100.1	70	130	0.93	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW2	LCSW	09/22/14 13:10	PCN45704	1409		1460	umhos/cm	103.6	90	110			
WG371546LCSW5	LCSW	09/22/14 16:48	PCN45704	1409		1450	umhos/cm	102.9	90	110			
WG371546LCSW8	LCSW	09/22/14 19:58	PCN45704	1409		1450	umhos/cm	102.9	90	110			
L20639-06DUP	DUP	09/22/14 22:59			400	403	umhos/cm				0.7	20	
WG371546LCSW11	LCSW	09/22/14 23:04	PCN45704	1409		1440	umhos/cm	102.2	90	110			
WG371546LCSW14	LCSW	09/23/14 2:40	PCN45704	1409		1430	umhos/cm	101.5	90	110			
WG371546LCSW17	LCSW	09/23/14 4:22	PCN45704	1409		1430	umhos/cm	101.5	90	110			

SPF Water Engineering

ACZ Project ID: ***L20632***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05024	mg/L	100.5	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04514	mg/L	90.3	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05	.0007	.04422	mg/L	87	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05	.0007	.04557	mg/L	89.7	70	130	3.01	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05051	mg/L	101	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05		.05168	mg/L	103.4	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05	U	.04365	mg/L	87.3	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05	U	.04429	mg/L	88.6	70	130	1.46	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371934													
WG371888LRB	LRB	09/26/14 20:39				U	mg/L		-0.003	0.003			
WG371888LFB	LFB	09/26/14 20:40	WI140918-4	.2		.1877	mg/L	93.9	90	110			
L20630-01DUP	DUP	09/26/14 20:54			U	U	mg/L				0	20	RA
L20630-02LFM	LFM	09/26/14 20:56	WI140918-4	.2	U	.1677	mg/L	83.9	90	110			M2

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371932													
WG371932ICV	ICV	09/26/14 19:52	WI140918-1	.3		.2806	mg/L	93.5	90	110			
WG371932ICB	ICB	09/26/14 19:52				U	mg/L		-0.003	0.003			
WG371937													
WG371907LRB	LRB	09/26/14 21:45				U	mg/L		-0.003	0.003			
WG371907LFB	LFB	09/26/14 21:46	WI140918-6	.2		.1866	mg/L	93.3	90	110			
L20750-02LFM	LFM	09/26/14 22:10	WI140918-6	.2	U	.1805	mg/L	90.3	90	110			
L20750-02DUP	DUP	09/26/14 22:11			U	U	mg/L				0	20	RA

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	1.5		1.55	mg/L	103.3	90	110			
L20630-03DUP	DUP	09/29/14 22:44			.69	.71	mg/L				2.9	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	1.5		1.56	mg/L	104	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	1.5	.37	1.91	mg/L	102.7	90	110			

SPF Water Engineering

ACZ Project ID: ***L20632***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.09	mg/L	104.5	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.001		1.04	mg/L	103.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.001	U	1.04	mg/L	103.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.001	U	1.02	mg/L	101.9	85	115	1.94	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		2.05	mg/L	102.5	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.3	0.3			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.22	0.22			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.001		1.08	mg/L	107.9	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.001	U	1.08	mg/L	107.9	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.001	U	1.07	mg/L	106.9	70	130	0.93	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.979	mg/L	99	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.06	0.06			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0014		1.048	mg/L	104.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0014	.09	1.095	mg/L	100.4	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0014	.09	1.11	mg/L	101.9	85	115	1.36	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.986	mg/L	99.3	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.06	0.06			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.044	0.044			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.0014		1.075	mg/L	107.3	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.0014	.3	1.354	mg/L	105.3	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.0014	.3	1.351	mg/L	105	70	130	0.22	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.051	mg/L	102	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04825	mg/L	96.4	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.04883	mg/L	97.6	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.04881	mg/L	97.5	70	130	0.04	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05285	mg/L	105.7	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05036	mg/L	100.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.05002	mg/L	99.9	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.04987	mg/L	99.6	70	130	0.3	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.0262	mg/L	101.3	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.024	0.024			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.002		1.021	mg/L	101.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.002	.02	1.03	mg/L	100.8	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.002	.02	1.035	mg/L	101.3	85	115	0.48	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.9778	mg/L	98.9	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.024	0.024			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.0176	0.0176			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.002		1.033	mg/L	103.1	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.002	.014	1.035	mg/L	101.9	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.002	.014	1.034	mg/L	101.8	70	130	0.1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		97.37	mg/L	97.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				.28	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	50.00283		50.02	mg/L	100	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	50.00283	21.9	70.14	mg/L	96.5	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	50.00283	21.9	71.28	mg/L	98.8	85	115	1.61	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	100		96.79	mg/L	96.8	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.6	0.6			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.44	0.44			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	50.00283		50.64	mg/L	101.3	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	50.00283	15.9	64.54	mg/L	97.3	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	50.00283	15.9	64.65	mg/L	97.5	70	130	0.17	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05221	mg/L	104.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0501		.05037	mg/L	100.5	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0501	.0368	.08386	mg/L	93.9	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0501	.0368	.08376	mg/L	93.7	70	130	0.12	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05209	mg/L	104.2	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0501		.05019	mg/L	100.2	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0501	.002	.052	mg/L	99.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0501	.002	.05204	mg/L	99.9	70	130	0.08	20	
WG372171													
WG372171ICV	ICV	10/02/14 22:59	MS141001-1	.05		.04985	mg/L	99.7	90	110			
WG372171ICB	ICB	10/02/14 23:02				U	mg/L		-0.0015	0.0015			
WG371951LRB	LRB	10/02/14 23:04				U	mg/L		-0.0011	0.0011			
WG371951LFB	LFB	10/02/14 23:07	MS140904-3	.0501		.04749	mg/L	94.8	85	115			
WG372023LRB	LRB	10/02/14 23:53				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	10/02/14 23:56	MS140904-3	.0501		.04641	mg/L	92.6	85	115			
L20632-03LFM	LFM	10/03/14 0:28	MS140904-3	.0501	.002	.05	mg/L	95.8	70	130			
L20632-03LFMD	LFMD	10/03/14 0:31	MS140904-3	.0501	.002	.0496	mg/L	95	70	130	0.8	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372105													
WG372105CCV1	CCV	10/01/14 11:23	HG140929-4	10		9.51	ng/L	95.1	76.5	123.4			
WG372105CCB1	CCB	10/01/14 11:28				U	ng/L		-0.5	0.5			
WG372105PQV	PQV	10/01/14 11:33	HG140929-5	.5		.57	ng/L	114	70	130			
WG372105LFB	LFB	10/01/14 11:38	HG140929-6	2		2.1	ng/L	105	71	125			
L20631-01MS	MS	10/01/14 11:48	HG140929-6	2	.2	2.11	ng/L	95.5	71	125			
L20631-01MSD	MSD	10/01/14 11:54	HG140929-6	2	.2	2.11	ng/L	95.5	71	125	0	24	
WG372105CCV2	CCV	10/01/14 12:24	HG140929-4	10		9.76	ng/L	97.6	76.5	123.4			
WG372105CCB2	CCB	10/01/14 12:29				U	ng/L		-0.5	0.5			
WG372105CCV3	CCV	10/01/14 13:20	HG140929-4	10		9.67	ng/L	96.7	76.5	123.4			
WG372105CCB3	CCB	10/01/14 13:25				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L20632***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371649													
WG371649ICV	ICV	09/30/14 8:58	HG140929-4	10		9.81	ng/L	98.1	79	121			
WG371649ICB	ICB	09/30/14 9:03				U	ng/L		-0.5	0.5			
WG372135													
WG372135CCV1	CCV	10/01/14 13:20	HG140929-4	10		9.67	ng/L	96.7	76.5	123.4			
WG372135CCB1	CCB	10/01/14 13:25				U	ng/L		-0.5	0.5			
WG372135PQV	PQV	10/01/14 13:32	HG140929-5	.5		.59	ng/L	118	70	130			
WG372135LFB	LFB	10/01/14 13:37	HG140929-6	2		2.09	ng/L	104.5	71	125			
L20632-01MS	MS	10/01/14 14:08	HG140929-6	2	.3	2.21	ng/L	95.5	71	125			
L20632-01MSD	MSD	10/01/14 14:13	HG140929-6	2	.3	2.28	ng/L	99	71	125	3.12	24	
WG372135CCV2	CCV	10/01/14 14:28	HG140929-4	10		9.45	ng/L	94.5	76.5	123.4			
WG372135CCB2	CCB	10/01/14 14:33				U	ng/L		-0.5	0.5			
WG372135CCV3	CCV	10/01/14 15:18	HG140929-4	10		9.48	ng/L	94.8	76.5	123.4			
WG372135CCB3	CCB	10/01/14 15:23				U	ng/L		-0.5	0.5			
WG372135CCV4	CCV	10/01/14 15:54	HG140929-4	10		9.31	ng/L	93.1	76.5	123.4			
WG372135CCB4	CCB	10/01/14 15:59				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.01998		.01915	mg/L	95.8	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0015	0.0015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.04792	mg/L	95.5	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0502	.7978	.86	mg/L	123.9	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0502	.7978	.8483	mg/L	100.6	70	130	1.37	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.01998		.01934	mg/L	96.8	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0015	0.0015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.0011	0.0011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0502	.0104	.06468	mg/L	108.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0502	.0104	.06506	mg/L	108.9	70	130	0.59	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05094	mg/L	101.9	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0018	0.0018			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05		.04555	mg/L	91.1	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05	.0012	.04525	mg/L	88.1	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05	.0012	.04649	mg/L	90.6	70	130	2.7	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05214	mg/L	104.3	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0018	0.0018			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00132	0.00132			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05		.05232	mg/L	104.6	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05	U	.0451	mg/L	90.2	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05	U	.04554	mg/L	91.1	70	130	0.97	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371943													
WG371943ICV	ICV	09/27/14 14:09	WI140718-9	2.416		2.267	mg/L	93.8	90	110			
WG371943ICB	ICB	09/27/14 14:10				U	mg/L		-0.06	0.06			
WG371943LFB1	LFB	09/27/14 14:14	WI140719-4	2		2.001	mg/L	100.1	90	110			
WG371943LFB2	LFB	09/27/14 14:48	WI140719-4	2		1.959	mg/L	98	90	110			
L20632-01AS	AS	09/27/14 14:50	WI140719-4	2	U	2.014	mg/L	100.7	90	110			
L20632-02DUP	DUP	09/27/14 14:55			.57	.562	mg/L				1.4	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372074													
WG372074ICV	ICV	09/30/14 15:28	WI131021-1	1.003		1.008	mg/L	100.5	90	110			
WG372074ICB	ICB	09/30/14 15:31				U	mg/L		-0.15	0.15			
WG372074LFB1	LFB	09/30/14 15:32	WI140113-8	1		.946	mg/L	94.6	90	110			
L20616-02DUP	DUP	09/30/14 15:34			U	U	mg/L				0	20	RA
L20630-02AS	AS	09/30/14 15:37	WI140113-8	1	U	.973	mg/L	97.3	90	110			
WG372074LFB2	LFB	09/30/14 16:04	WI140113-8	1		.986	mg/L	98.6	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371546													
WG371546LCSW1	LCSW	09/22/14 13:08	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW4	LCSW	09/22/14 16:47	PCN45660	5.99		6	units	100.2	5.99	6.01			
WG371546LCSW7	LCSW	09/22/14 19:57	PCN45660	5.99		6	units	100.2	5.99	6.01			
L20639-06DUP	DUP	09/22/14 22:59			4.1	4	units				2.5	20	
WG371546LCSW10	LCSW	09/22/14 23:02	PCN45660	5.99		6	units	100.2	5.99	6.01			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372098													
WG372098ICV	ICV	09/30/14 22:18	WI140923-3	.65228		.649	mg/L	99.5	90	110			
WG372098ICB	ICB	09/30/14 22:21				U	mg/L		-0.03	0.03			
WG371971LRB	LRB	09/30/14 22:22				U	mg/L		-0.03	0.03			
WG371971LFB	LFB	09/30/14 22:23	WI140918-1	.5		.465	mg/L	93	90	110			
L20631-02LFM	LFM	09/30/14 22:26	WI140918-1	.5	U	.467	mg/L	93.4	90	110			
L20632-01DUP	DUP	09/30/14 22:28			.03	.032	mg/L				6.5	20	RA

SPF Water Engineering

ACZ Project ID: ***L20632***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	20		19.88	mg/L	99.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	98.07852		100.6	mg/L	102.6	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	98.07852	2.1	101.3	mg/L	101.1	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	98.07852	2.1	102.7	mg/L	102.6	85	115	1.37	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	20		19.75	mg/L	98.8	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.6	0.6			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.44	0.44			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	98.07852		100.1	mg/L	102.1	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	98.07852	9.7	108.6	mg/L	100.8	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	98.07852	9.7	107.9	mg/L	100.1	70	130	0.65	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371552													
WG371552PBW	PBW	09/22/14 11:32				U	mg/L		-20	20			
WG371552LCSW	LCSW	09/22/14 11:37	PCN46226	260		258	mg/L	99.2	80	120			
L20639-04DUP	DUP	09/22/14 13:31			190	196	mg/L				3.1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371572													
WG371572PBW	PBW	09/22/14 14:20				U	mg/L		-15	15			
WG371572LCSW	LCSW	09/22/14 14:20	PCN46226	160		147	mg/L	91.9	80	120			
L20632-01DUP	DUP	09/22/14 14:39			U	U	mg/L				0	10	RA
WG371680													
WG371680PBW	PBW	09/23/14 15:52				U	mg/L		-15	15			
WG371680LCSW	LCSW	09/23/14 15:53	PCN46227	160		165	mg/L	103.1	80	120			
L20639-02DUP	DUP	09/23/14 16:13			15	15	mg/L				0	10	RA

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.02	mg/L	101	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.3	0.3			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.0009		1.08	mg/L	107.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.0009	U	1.06	mg/L	105.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.0009	U	1.07	mg/L	106.9	85	115	0.94	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		2.01	mg/L	100.5	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.3	0.3			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.22	0.22			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.0009		1.09	mg/L	108.9	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.0009	U	1.08	mg/L	107.9	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.0009	U	1.08	mg/L	107.9	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05058	mg/L	101.2	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05015		.04666	mg/L	93	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05015	.0002	.0564	mg/L	112.1	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05015	.0002	.05542	mg/L	110.1	70	130	1.75	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05064	mg/L	101.3	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05015		.05708	mg/L	113.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05015	.0039	.04922	mg/L	90.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05015	.0039	.04943	mg/L	90.8	70	130	0.43	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.02002		.01987	mg/L	99.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.00015	0.00015			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.01002		.009696	mg/L	96.8	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.01002	U	.009146	mg/L	91.3	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.01002	U	.008853	mg/L	88.4	70	130	3.26	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.02002		.02018	mg/L	100.8	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.00015	0.00015			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00011	0.00011			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.01002		.009901	mg/L	98.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.01002	U	.009509	mg/L	94.9	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.01002	U	.009477	mg/L	94.6	70	130	0.34	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	100		98.83	mg/L	98.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.6	0.6			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	100.0589		100.7	mg/L	100.6	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	100.0589	21	119.7	mg/L	98.6	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	100.0589	21	121.5	mg/L	100.4	85	115	1.49	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	100		98.15	mg/L	98.2	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.6	0.6			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.44	0.44			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	100.0589		100.3	mg/L	100.2	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	100.0589	47.3	145.7	mg/L	98.3	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	100.0589	47.3	144.7	mg/L	97.3	70	130	0.69	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.987	mg/L	99.4	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.015	0.015			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.5238	mg/L	104.7	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	.833	1.297	mg/L	92.7	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	.833	1.31	mg/L	95.3	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.9678	mg/L	98.4	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.015	0.015			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.011	0.011			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	.5005		.514	mg/L	102.7	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	.5005	.148	.6526	mg/L	100.8	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	.5005	.148	.6502	mg/L	100.3	70	130	0.37	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372005													
WG372005LFB1	LFB	09/29/14 17:58	WI140610-6	30		30.3	mg/L	101	90	110			
L20630-03DUP	DUP	09/29/14 22:44			56.1	55.7	mg/L				0.7	20	
WG372005LFB2	LFB	09/30/14 2:37	WI140610-6	30		30.1	mg/L	100.3	90	110			
L20631-01AS	AS	09/30/14 11:15	WI140610-6	30	16.8	47.2	mg/L	101.3	90	110			

SPF Water Engineering

ACZ Project ID: ***L20632***

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05364	mg/L	107.3	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.0502		.05125	mg/L	102.1	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.0502	U	.05247	mg/L	104.5	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.0502	U	.05244	mg/L	104.5	70	130	0.06	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05328	mg/L	106.6	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.0502		.04973	mg/L	99.1	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.0502	U	.0516	mg/L	102.8	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.0502	U	.05138	mg/L	102.4	70	130	0.43	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.0501		.04828	mg/L	96.4	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04891	mg/L	97.7	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.05089	mg/L	101.7	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.05001	mg/L	99.9	70	130	1.74	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.0501		.05006	mg/L	99.9	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05342	mg/L	106.7	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	U	.0531	mg/L	106.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	U	.05435	mg/L	108.6	70	130	2.33	20	

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		2.024	mg/L	101.2	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.015	0.015			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	1.005		1.033	mg/L	102.8	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	1.005	U	1.016	mg/L	101.1	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	1.005	U	1.032	mg/L	102.7	85	115	1.56	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.9925	mg/L	99.6	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.015	0.015			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.011	0.011			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	1.005		1.078	mg/L	107.3	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	1.005	.016	1.082	mg/L	106.1	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	1.005	.016	1.076	mg/L	105.5	70	130	0.56	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.0535	mg/L	107	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0003	0.0003			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.0515	mg/L	102.9	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	.0039	.05697	mg/L	106	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	.0039	.05664	mg/L	105.4	70	130	0.58	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.05202	mg/L	104	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0003	0.0003			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00022	0.00022			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05051	mg/L	100.9	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0034	.05463	mg/L	102.4	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0034	.0542	mg/L	101.5	70	130	0.79	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371940													
WG371940ICV	ICV	09/27/14 19:50	MS140723-1	.05		.05049	mg/L	101	90	110			
WG371940ICB	ICB	09/27/14 19:54				U	mg/L		-0.0006	0.0006			
WG371940LFB	LFB	09/27/14 19:57	MS140904-3	.05005		.04761	mg/L	95.1	85	115			
L20649-03AS	AS	09/27/14 21:16	MS140904-3	.05005	U	.0499	mg/L	99.7	70	130			
L20649-03ASD	ASD	09/27/14 21:19	MS140904-3	.05005	U	.05099	mg/L	101.9	70	130	2.16	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG372092													
WG372092ICV	ICV	09/30/14 21:57	MS140723-1	.05		.04776	mg/L	95.5	90	110			
WG372092ICB	ICB	09/30/14 22:00				U	mg/L		-0.0006	0.0006			
WG372023LRB	LRB	09/30/14 22:04				U	mg/L		-0.00044	0.00044			
WG372023LFB	LFB	09/30/14 22:07	MS140904-3	.05005		.05093	mg/L	101.8	85	115			
L20632-03LFM	LFM	09/30/14 23:21	MS140904-3	.05005	.0443	.09638	mg/L	104.1	70	130			
L20632-03LFMD	LFMD	09/30/14 23:24	MS140904-3	.05005	.0443	.09825	mg/L	107.8	70	130	1.92	20	

SPF Water Engineering

ACZ Project ID: ***L20632***

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371670													
WG371670ICV	ICV	09/23/14 20:10	II140917-1	2		1.956	mg/L	97.8	95	105			
WG371670ICB	ICB	09/23/14 20:16				U	mg/L		-0.03	0.03			
WG371670LFB	LFB	09/23/14 20:29	II140904-2	.5005		.52	mg/L	103.9	85	115			
L20637-01AS	AS	09/23/14 20:54	II140904-2	.5005	U	.505	mg/L	100.9	85	115			
L20637-01ASD	ASD	09/23/14 20:57	II140904-2	.5005	U	.517	mg/L	103.3	85	115	2.35	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG371949													
WG371949ICV	ICV	09/29/14 11:46	II140825-1	2		1.977	mg/L	98.9	95	105			
WG371949ICB	ICB	09/29/14 11:52				U	mg/L		-0.03	0.03			
WG371861LRB	LRB	09/29/14 12:05				U	mg/L		-0.022	0.022			
WG371861LFB	LFB	09/29/14 12:08	II140904-2	.5005		.523	mg/L	104.5	85	115			
L20632-02LFM	LFM	09/29/14 12:17	II140904-2	.5005	U	.518	mg/L	103.5	70	130			
L20632-02LFMD	LFMD	09/29/14 12:20	II140904-2	.5005	U	.522	mg/L	104.3	70	130	0.77	20	

SPF Water Engineering ACZ Project ID: ***L20632***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20632-01	WG372092	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372098	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371572	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L20632-02	WG372092	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372098	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371680	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L20632***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L20632-03	WG372092	Beryllium, total	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG371934	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371937	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372074	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG372098	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371680	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG371546	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L20632
Date Received: 09/19/2014 09:59
Received By: as
Date Printed: 9/22/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?		X	
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA20446	0	7	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

L20632

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 3rd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW							
Prod-1	9/16/14 17:20	GW	8	X							
Twin Springs North	9/16/14 11:00	GW	8	X							
Twin Springs South	9/16/14 12:00	GW	8	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	9/18/14 16:00	[signature]	9-19-14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L20632 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Quote Number: SPF-2014-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP-MS		$9.60
Total Hot Plate Digestion	M200.2 ICP		$9.60
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Calcium, total	M200.7 ICP	0.2 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

REPAD.09.06.05.01 S/ m D/ ## P/

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Lithium, total	M200.7 ICP	0.02 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$40.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Potassium, total	M200.7 ICP	0.3 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.3 mg/L	$0.00
Sodium, total	M200.7 ICP	0.3 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Strontium, total	M200.7 ICP	0.01 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$13.60
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$13.60
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$95.00

REPAD.09.06.05.01 S/ m D/ ## P/

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

11/11/2013

Setup charge for ICP, total			$95.00
Setup Charge for ICPMS - dissolved			$95.00
Setup for ICPMS Totals Analysis			$95.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$8.80
Chloride	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
Conductivity @25C	SM2510B	1 umhos/cm	$6.40
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$28.80
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillat	0.003 mg/L	$28.80
Fluoride	M300.0 - Ion Chromatography	0.1 mg/L	$10.40
Hardness as CaCO3	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$8.80
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05 mg/L	$8.80
pH (lab)	SM4500H+ B	0.1 C	$6.40
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01 mg/L	$17.60
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$8.84
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$8.80
Sulfate	M300.0 - Ion Chromatography	0.5 mg/L	$10.40
		Cost/Sample:	**$669.64**

Cient is field filtering. This quote is based on a Standard Turnaround Time (TAT) of approximately 14 days for water matrices (10 working days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a $125.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, bottles pre-preserved as needed, labels, COCs and ice-packs shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

November 13, 2014

Report to:
Erik Boe
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID: Calico 3rd Quarter 2014 Sampli
ACZ Project ID: L21366

Erik Boe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 01, 2014. This project has been assigned to ACZ's project number, L21366. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L21366. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after December 13, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L21366-01***
Date Sampled: *09/17/14 14:50*
Date Received: *11/01/14*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								11/05/14 13:40	mss2
Cyanide, WAD	SM4500-CN I- distillation								11/05/14 15:00	mss2
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								11/04/14 16:00	mss2
Total Hot Plate Digestion	M200.2 ICP-MS								11/10/14 12:30	las
Total Hot Plate Digestion	M200.2 ICP								11/05/14 13:07	aeb

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	11/06/14 10:56	aeb
Antimony, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	11/12/14 13:41	las
Arsenic, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	11/12/14 13:41	las
Barium, total	M200.7 ICP	1		U		mg/L	0.003	0.02	11/06/14 10:56	aeb
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	11/12/14 13:41	las
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	11/06/14 10:56	aeb
Boron, total	M200.7 ICP	1		U		mg/L	0.01	0.05	11/06/14 10:56	aeb
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	11/12/14 13:41	las
Calcium, total	M200.7 ICP	1		U		mg/L	0.1	0.5	11/06/14 10:56	aeb
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	11/12/14 13:41	las
Cobalt, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	11/12/14 13:41	las
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	11/12/14 13:41	las
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	11/06/14 10:56	aeb
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	11/06/14 10:56	aeb
Lead, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	11/12/14 13:41	las
Lithium, total	M200.7 ICP	1		U		mg/L	0.008	0.04	11/06/14 10:56	aeb
Magnesium, total	M200.7 ICP	1		U		mg/L	0.2	1	11/06/14 10:56	aeb
Manganese, total	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.003	11/12/14 13:41	las
Molybdenum, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.003	11/12/14 13:41	las
Nickel, total	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	11/12/14 13:41	las
Potassium, total	M200.7 ICP	1		U		mg/L	0.2	1	11/06/14 10:56	aeb
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	11/06/14 10:56	aeb
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	11/12/14 13:41	las
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	11/12/14 13:41	las
Sodium, total	M200.7 ICP	1		U		mg/L	0.2	1	11/06/14 10:56	aeb
Strontium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	11/06/14 10:56	aeb
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	11/12/14 13:41	las
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	11/12/14 13:41	las
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	11/06/14 10:56	aeb
Uranium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	11/12/14 13:41	las
Vanadium, total	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	11/12/14 13:41	las
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	11/06/14 10:56	aeb

SPF Water Engineering
Project ID: Calico 3rd Quarter 2014 Sa
Sample ID: TRANSFER BLANK

ACZ Sample ID: ***L21366-01***
Date Sampled: *09/17/14 14:50*
Date Received: *11/01/14*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chloride	M300.0 - Ion Chromatography	1		UH	*	mg/L	0.5	2.5	11/04/14 23:40	tcd
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	11/06/14 10:59	mss2
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	11/06/14 11:50	mss2
Fluoride	M300.0 - Ion Chromatography	1		UH	*	mg/L	0.05	0.25	11/04/14 23:40	tcd
Hardness as CaCO3 (total)	SM2340B - Calculation			U		mg/L	0.8	4	11/13/14 15:33	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		UH	*	mg/L	0.02	0.1	11/05/14 23:41	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	1		UH	*	mg/L	0.05	0.2	11/03/14 18:19	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		UH	*	mg/L	0.01	0.05	11/05/14 23:50	pjb
Sulfate	M300.0 - Ion Chromatography	1		UH	*	mg/L	0.5	2.5	11/04/14 23:40	tcd

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L21366***

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		2.005	mg/L	100.3	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.09	0.09			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.066	0.066			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.0015		1.034	mg/L	103.2	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.0015	.32	1.386	mg/L	106.4	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.0015	.32	1.401	mg/L	107.9	70	130	1.08	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.02002		.02081	mg/L	103.9	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0012	0.0012			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00088	0.00088			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.01		.01077	mg/L	107.7	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.01	.0016	.0122	mg/L	106	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.01	.0016	.01208	mg/L	104.8	70	130	0.99	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.05061	mg/L	101.2	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0006	0.0006			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00044	0.00044			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.0501		.05326	mg/L	106.3	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.0501	.0003	.05107	mg/L	101.3	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.0501	.0003	.05006	mg/L	99.3	70	130	2	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.9705	mg/L	98.5	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.009	0.009			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.0066	0.0066			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	.5		.4903	mg/L	98.1	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	.5	.021	.5167	mg/L	99.1	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	.5	.021	.5229	mg/L	100.4	70	130	1.19	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.0474	mg/L	94.8	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.00015	0.00015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00011	0.00011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.04978	mg/L	99.5	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	U	.04951	mg/L	98.9	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	U	.04912	mg/L	98.1	70	130	0.79	20	

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ACZ Project ID: ***L21366***

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.974	mg/L	98.7	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.12	0.12			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.088	0.088			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1		.997	mg/L	99.7	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1	U	1.011	mg/L	101.1	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1	U	1.048	mg/L	104.8	70	130	3.59	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		2.03	mg/L	101.5	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.03	0.03			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.022	0.022			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	.5005		.495	mg/L	98.9	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	.5005	U	.509	mg/L	101.7	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	.5005	U	.516	mg/L	103.1	70	130	1.37	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.04843	mg/L	96.9	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.0501		.05081	mg/L	101.4	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.0501	U	.05013	mg/L	100.1	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.0501	U	.04961	mg/L	99	70	130	1.04	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	100		98.67	mg/L	98.7	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.3	0.3			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.22	0.22			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	67.99189		68.47	mg/L	100.7	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	67.99189	342	407.4	mg/L	96.2	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	67.99189	342	406.7	mg/L	95.2	70	130	0.17	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	19.94		19.1	mg/L	95.8	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG374033													
WG374033LFB	LFB	11/04/14 15:18	WI141002-6	30		29.1	mg/L	97	90	110			
L21264-02DUP	DUP	11/04/14 20:05			U	U	mg/L				0	20	RA
L21264-03AS	AS	11/04/14 20:40	WI141002-6	30	U	29.1	mg/L	97	90	110			

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ACZ Project ID: ***L21366***

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.04877	mg/L	97.5	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0015	0.0015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.0011	0.0011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.05019	mg/L	100.3	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	.0015	.05016	mg/L	97.2	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	.0015	.04984	mg/L	96.6	70	130	0.64	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.05081	mg/L	101.6	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.00015	0.00015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00011	0.00011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.05076	mg/L	101.4	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	.00009	.0504	mg/L	100.5	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	.00009	.05024	mg/L	100.2	70	130	0.32	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.0489	mg/L	97.8	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0015	0.0015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.0011	0.0011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05		.05066	mg/L	101.3	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05	.0007	.05092	mg/L	100.4	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05	.0007	.0504	mg/L	99.4	70	130	1.03	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374192													
WG374192ICV	ICV	11/06/14 9:49	WI141103-8	.3		.2771	mg/L	92.4	90	110			
WG374192ICB	ICB	11/06/14 9:50				U	mg/L		-0.003	0.003			
WG374108LRB	LRB	11/06/14 9:51				U	mg/L		-0.003	0.003			
WG374108LFB	LFB	11/06/14 10:45	WI141103-3	.2		.1861	mg/L	93.1	90	110			
L21350-03LFM	LFM	11/06/14 10:50	WI141103-3	.2	.047	.2396	mg/L	96.3	90	110			
L21351-01DUP	DUP	11/06/14 10:52			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L21366***

Cyanide, WAD SM4500-CN I-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374192													
WG374192ICV	ICV	11/06/14 9:49	WI141103-8	.3		.2771	mg/L	92.4	90	110			
WG374192ICB	ICB	11/06/14 9:50				U	mg/L		-0.003	0.003			
L21350-03LFM	LFM	11/06/14 10:50	WI141103-3	.2	.047	.2396	mg/L	96.3	90	110			
L21351-01DUP	DUP	11/06/14 10:52			U	U	mg/L				0	20	RA
WG374210													
WG374127LRB	LRB	11/06/14 11:25				U	mg/L		-0.003	0.003			
L21350-03LFM	LFM	11/06/14 11:39	WI141103-5	.2	.028	.1083	mg/L	40.2	90	110			M2
L21351-01DUP	DUP	11/06/14 11:41			U	U	mg/L				0	20	RA
WG374127LFB	LFB	11/06/14 11:51	WI141103-5	.2		.182	mg/L	91	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	4.02		3.76	mg/L	93.5	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-0.15	0.15			
WG374033													
WG374033LFB	LFB	11/04/14 15:18	WI141002-6	1.5		1.44	mg/L	96	90	110			
L21264-02DUP	DUP	11/04/14 20:05			U	U	mg/L				0	20	RA
L21264-03AS	AS	11/04/14 20:40	WI141002-6	1.5	U	1.43	mg/L	95.3	90	110			

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		2.06	mg/L	103	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.3	0.3			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.22	0.22			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.001		1.02	mg/L	101.9	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.001	U	1.04	mg/L	103.9	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.001	U	1.07	mg/L	106.9	70	130	2.84	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.972	mg/L	98.6	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.06	0.06			
WG374098LRB	LRB	11/06/14 9:58				.032	mg/L		-0.044	0.044			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.0014		.992	mg/L	99.1	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.0014	6.05	6.983	mg/L	93.2	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.0014	6.05	6.996	mg/L	94.5	70	130	0.19	20	

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ACZ Project ID: ***L21366***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.04942	mg/L	98.8	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.0482	mg/L	96.3	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	.0002	.04846	mg/L	96.4	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	.0002	.04858	mg/L	96.7	70	130	0.25	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		2.006	mg/L	100.3	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.024	0.024			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.0176	0.0176			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.002		1.003	mg/L	100.1	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.002	.046	1.096	mg/L	104.8	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.002	.046	1.113	mg/L	106.5	70	130	1.54	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	100		96.71	mg/L	96.7	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.6	0.6			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.44	0.44			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	50.00283		47.87	mg/L	95.7	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	50.00283	63.4	111.5	mg/L	96.2	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	50.00283	63.4	111.8	mg/L	96.8	70	130	0.27	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.05082	mg/L	101.6	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0015	0.0015			
WG374349LRB	LRB	11/12/14 13:18				.00121	mg/L		-0.0011	0.0011			BF
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.0501		.05166	mg/L	103.1	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.0501	.0032	.05403	mg/L	101.5	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.0501	.0032	.05402	mg/L	101.4	70	130	0.02	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.01998		.01888	mg/L	94.5	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0015	0.0015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.0011	0.0011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.0502		.04826	mg/L	96.1	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.0502	.0014	.05066	mg/L	98.1	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.0502	.0014	.05035	mg/L	97.5	70	130	0.61	20	

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ACZ Project ID: ***L21366***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.0496	mg/L	99.2	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0018	0.0018			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00132	0.00132			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05		.05078	mg/L	101.6	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05	.0007	.04863	mg/L	95.9	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05	.0007	.04832	mg/L	95.2	70	130	0.64	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374168													
WG374168ICV	ICV	11/05/14 19:11	WI141018-1	2.416		2.356	mg/L	97.5	90	110			
WG374168ICB	ICB	11/05/14 19:12				U	mg/L		-0.06	0.06			
WG374174													
WG374174LFB	LFB	11/05/14 23:10	WI140719-4	2		2.012	mg/L	100.6	90	110			
L21277-03AS	AS	11/05/14 23:29	WI140719-4	2	U	2.024	mg/L	101.2	90	110			
L21277-04DUP	DUP	11/05/14 23:32			.29	.285	mg/L				1.7	20	

Nitrogen, ammonia M350.1 - Automated Phenate

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG373982													
WG373982ICV	ICV	11/03/14 17:28	WI141103-1	.999		1.026	mg/L	102.7	90	110			
WG373982ICB	ICB	11/03/14 17:29				U	mg/L		-0.15	0.15			
WG373982LFB1	LFB	11/03/14 17:30	WI140113-8	1		.996	mg/L	99.6	90	110			
WG373982LFB2	LFB	11/03/14 18:03	WI140113-8	1		1.038	mg/L	103.8	90	110			
L21261-06AS	AS	11/03/14 18:05	WI140113-8	1	U	1.011	mg/L	101.1	90	110			
L21261-07DUP	DUP	11/03/14 18:07			U	U	mg/L				0	20	RA

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374172													
WG374172ICV	ICV	11/05/14 23:13	WI140923-3	.65228		.644	mg/L	98.7	90	110			
WG374172ICB	ICB	11/05/14 23:16				U	mg/L		-0.03	0.03			
WG374035LRB	LRB	11/05/14 23:17				U	mg/L		-0.03	0.03			
WG374035LFB	LFB	11/05/14 23:18	WI141104-2	.5		.46	mg/L	92	90	110			
L21325-01LFM	LFM	11/05/14 23:36	WI141104-2	.5	.03	.49	mg/L	92	90	110			
L21325-02DUP	DUP	11/05/14 23:39			.01	.014	mg/L				33.3	20	RA

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	20		19.61	mg/L	98.1	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.6	0.6			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.44	0.44			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	98.07852		94.35	mg/L	96.2	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	98.07852	29.1	126.4	mg/L	99.2	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	98.07852	29.1	128.3	mg/L	101.1	70	130	1.49	20	

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ACZ Project ID: ***L21366***

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.99	mg/L	99.5	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.3	0.3			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.22	0.22			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.0009		1.02	mg/L	101.9	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.0009	U	1.02	mg/L	101.9	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.0009	U	1.02	mg/L	101.9	70	130	0	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.05025	mg/L	100.5	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05015		.0515	mg/L	102.7	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05015	U	.04848	mg/L	96.7	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05015	U	.0493	mg/L	98.3	70	130	1.68	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.02002		.01945	mg/L	97.2	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.00015	0.00015			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00011	0.00011			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.01002		.01004	mg/L	100.2	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.01002	U	.009885	mg/L	98.7	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.01002	U	.009812	mg/L	97.9	70	130	0.74	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	100		97.39	mg/L	97.4	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.6	0.6			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.44	0.44			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	100.0589		96.43	mg/L	96.4	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	100.0589	29	128.7	mg/L	99.6	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	100.0589	29	130.9	mg/L	101.8	70	130	1.69	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.962	mg/L	98.1	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.015	0.015			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.011	0.011			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	.5005		.4956	mg/L	99	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	.5005	.722	1.215	mg/L	98.5	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	.5005	.722	1.233	mg/L	102.1	70	130	1.47	20	

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ACZ Project ID: ***L21366***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG368886													
WG368886ICV	ICV	08/04/14 22:23	WI140722-1	50.05		46.7	mg/L	93.3	90	110			
WG368886ICB	ICB	08/04/14 22:40				U	mg/L		-1.5	1.5			
WG374033													
WG374033LFB	LFB	11/04/14 15:18	WI141002-6	30		28.2	mg/L	94	90	110			
L21264-02DUP	DUP	11/04/14 20:05			1.06	.99	mg/L				6.8	20	RA
L21264-03AS	AS	11/04/14 20:40	WI141002-6	30	U	28.1	mg/L	93.7	90	110			

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.04968	mg/L	99.4	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.0502		.04772	mg/L	95.1	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.0502	U	.04808	mg/L	95.8	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.0502	U	.04796	mg/L	95.5	70	130	0.25	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.0501		.0467	mg/L	93.2	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.04952	mg/L	98.9	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	U	.04944	mg/L	98.8	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	U	.04933	mg/L	98.6	70	130	0.22	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.9895	mg/L	99.5	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.015	0.015			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.011	0.011			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	1.005		.9962	mg/L	99.1	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	1.005	.006	.9954	mg/L	98.4	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	1.005	.006	.9996	mg/L	98.9	70	130	0.42	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.0523	mg/L	104.6	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0003	0.0003			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00022	0.00022			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05		.05082	mg/L	101.6	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05	U	.05221	mg/L	104.4	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05	U	.05241	mg/L	104.8	70	130	0.38	20	

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ACZ Project ID: ***L21366***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374534													
WG374534ICV	ICV	11/12/14 13:12	MS141027-2	.05		.04742	mg/L	94.8	90	110			
WG374534ICB	ICB	11/12/14 13:15				U	mg/L		-0.0006	0.0006			
WG374349LRB	LRB	11/12/14 13:18				U	mg/L		-0.00044	0.00044			
WG374349LFB	LFB	11/12/14 13:22	MS141103-2	.05005		.05041	mg/L	100.7	85	115			
L21383-02LFM	LFM	11/12/14 14:03	MS141103-2	.05005	.0004	.05068	mg/L	100.5	70	130			
L21383-02LFMD	LFMD	11/12/14 14:06	MS141103-2	.05005	.0004	.05011	mg/L	99.3	70	130	1.13	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG374191													
WG374191ICV	ICV	11/06/14 9:39	II141028-4	2		1.914	mg/L	95.7	95	105			
WG374191ICB	ICB	11/06/14 9:45				U	mg/L		-0.03	0.03			
WG374098LRB	LRB	11/06/14 9:58				U	mg/L		-0.022	0.022			
WG374098LFB	LFB	11/06/14 10:01	II141030-2	.5005		.495	mg/L	98.9	85	115			
L21378-01LFM	LFM	11/06/14 11:15	II141030-2	.5005	U	.466	mg/L	93.1	70	130			
L21378-01LFMD	LFMD	11/06/14 11:18	II141030-2	.5005	U	.466	mg/L	93.1	70	130	0	20	

SPF Water Engineering ACZ Project ID: ***L21366***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L21366-01	WG374534	Manganese, total	M200.8 ICP-MS	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG374033	Chloride	M300.0 - Ion Chromatography	H3	Sample was received and analyzed past holding time.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374192	Cyanide, total	M335.4 - Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374210	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			SM4500-CN I-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374033	Fluoride	M300.0 - Ion Chromatography	H3	Sample was received and analyzed past holding time.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374174	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	H3	Sample was received and analyzed past holding time.
	WG373982	Nitrogen, ammonia	M350.1 - Automated Phenate	H3	Sample was received and analyzed past holding time.
			M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374172	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	H3	Sample was received and analyzed past holding time.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG374033	Sulfate	M300.0 - Ion Chromatography	H3	Sample was received and analyzed past holding time.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

SPF Water Engineering ACZ Project ID: ***L21366***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, total	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico 3rd Quarter 2014 Sampling

ACZ Project ID: L21366
Date Received: 11/01/2014 09:39
Received By: ddp
Date Printed: 11/3/2014

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody complete and accurate?	X		
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits?	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
UNKNOWN			

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Relog C21366

~~E20631~~

ACZ Laboratories, Inc. WPC 10-31-14

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Erik Boe	Address: 300 E. Mallard Dr., Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: eboe@spfwater.com	Telephone: 208-383-4140

Copy of Report to:

Name:	E-mail: SAME
Company:	Telephone:

Invoice to:

Name: SAME	Address: SAME
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Erik Boe **Sampler's site Information** **State:** ID **Zip code** 83706 **Time Zone** MTN

Check box if observe Daylight Savings Time [X]

PROJECT INFORMATION

Quote #: SPF-2014-GW

PO#: Calico 3rd Quarter 2014 Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2014-GW	Per ACZ
Sagebrush Spring	9/17/14 13:45	GW	8	X	
Equipment Blank	9/17/14 14:20	GW	8	X	
Transfer Blank	9/17/14 14:50	GW	8	X	
Mercury Trip/Transfer	9/17/14 14:55	GW	1		X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
E.T.	9/18/14 16:00	WPL	9.19.14 0950

FRMAD050.12.12.12 White - Return with sample. Yellow - Retain for your records.

L21366 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 15, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

cc: Kurt Newbry

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41683

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 09, 2017. This project has been assigned to ACZ's project number, L41683. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L41683. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 14, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering

January 15, 2018

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41683

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from SPF Water Engineering on December 9, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L41683. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Antimony and Tin values for L41683-01 have been qualified with the R1 flag on the extended qualifier report. The chemist noted that the Matrix Spike (MS) RPD exceeded the method acceptance limit for Sb and Sn. Sample matrix interference is suspected as only Sb and Sn had RPD issues, and these elements have known solubility and/or volatility issues is some matrices. All other spike recoveries and RPDs within limits, and control sample (LFB) also within limits.

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: 59762

ACZ Sample ID: ***L41683-01***
Date Sampled: *12/06/17 15:00*
Date Received: *12/09/17*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/19/17 12:40	wtc
Cyanide, WAD	SM4500-CN I- distillation								12/19/17 10:50	kea
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/14/17 11:54	wtc
Total Hot Plate Digestion	M200.2 ICP-MS								12/19/17 14:10	scp
Total Hot Plate Digestion	M200.2 ICP				*				12/20/17 11:12	dcm

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: 59762

ACZ Sample ID: ***L41683-01***
Date Sampled: *12/06/17 15:00*
Date Received: *12/09/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/20/17 1:15	aeh
Aluminum, total	M200.7 ICP	2	3.37		*	mg/L	0.06	0.3	12/21/17 18:15	aeh
Antimony, dissolved	M200.8 ICP-MS	20	0.298			mg/L	0.008	0.04	12/22/17 18:26	mfm
Antimony, total	M200.8 ICP-MS	1	0.210		*	mg/L	0.0004	0.002	12/28/17 8:55	msh
Arsenic, dissolved	M200.8 ICP-MS	20	0.018	B		mg/L	0.004	0.02	12/22/17 18:26	mfm
Arsenic, total	M200.8 ICP-MS	1	0.163			mg/L	0.0002	0.001	12/28/17 8:55	msh
Barium, dissolved	M200.7 ICP	1	0.016	B		mg/L	0.003	0.02	12/20/17 1:15	aeh
Barium, total	M200.7 ICP	2	0.043			mg/L	0.006	0.03	12/22/17 12:31	aeh
Beryllium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.00005	0.0003	12/19/17 13:31	mfm
Beryllium, total	M200.8 ICP-MS	1	0.00057			mg/L	0.00005	0.0003	12/28/17 8:55	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/20/17 1:15	aeh
Bismuth, total	M200.7 ICP	2		U	*	mg/L	0.08	0.4	12/21/17 18:15	aeh
Boron, dissolved	M200.7 ICP	1	0.19			mg/L	0.01	0.05	12/20/17 1:15	aeh
Boron, total	M200.7 ICP	2	0.20			mg/L	0.02	0.1	12/21/17 18:15	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/19/17 13:31	mfm
Cadmium, total	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	12/20/17 19:11	msh
Calcium, dissolved	M200.7 ICP	1	79.9			mg/L	0.1	0.5	12/20/17 11:30	aeh
Calcium, total	M200.7 ICP	2	81.9			mg/L	0.2	1	12/21/17 18:15	aeh
Chromium, dissolved	M200.8 ICP-MS	20		U		mg/L	0.01	0.04	12/22/17 18:26	mfm
Chromium, total	M200.8 ICP-MS	1	0.0072			mg/L	0.0005	0.002	12/20/17 19:11	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.0165			mg/L	0.00005	0.0003	12/19/17 13:31	mfm
Cobalt, total	M200.8 ICP-MS	1	0.0199			mg/L	0.00005	0.0003	12/20/17 19:11	msh
Copper, dissolved	M200.8 ICP-MS	20		U		mg/L	0.008	0.04	12/22/17 18:26	mfm
Copper, total	M200.8 ICP-MS	1	0.005			mg/L	0.0004	0.002	12/20/17 19:11	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 1:15	aeh
Gallium, total	M200.7 ICP	2		U	*	mg/L	0.2	1	12/21/17 18:15	aeh
Iron, dissolved	M200.7 ICP	1	0.06			mg/L	0.02	0.05	12/20/17 1:15	aeh
Iron, total	M200.7 ICP	2	4.54			mg/L	0.04	0.1	12/21/17 18:15	aeh
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/19/17 13:31	mfm
Lead, total	M200.8 ICP-MS	1	0.0046			mg/L	0.0001	0.0005	12/28/17 8:55	msh
Lithium, dissolved	M200.7 ICP	1	0.209			mg/L	0.008	0.04	12/20/17 1:15	aeh
Lithium, total	M200.7 ICP	2	0.22			mg/L	0.02	0.08	12/21/17 18:15	aeh
Magnesium, dissolved	M200.7 ICP	1	8.5			mg/L	0.2	1	12/20/17 11:30	aeh
Magnesium, total	M200.7 ICP	2	8.7			mg/L	0.4	2	12/21/17 18:15	aeh
Manganese, dissolved	M200.8 ICP-MS	1	0.535			mg/L	0.0004	0.002	12/19/17 13:31	mfm
Manganese, total	M200.8 ICP-MS	1	0.589		*	mg/L	0.0004	0.002	12/20/17 19:11	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 11:31	mfm
Mercury, total	M1631, Atomic Fluorescence	1	20.4			ng/L	0.2	0.5	12/21/17 12:30	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0117			mg/L	0.0005	0.003	12/19/17 13:31	mfm
Molybdenum, total	M200.8 ICP-MS	1	0.0138			mg/L	0.0005	0.003	12/20/17 19:11	msh
Nickel, dissolved	M200.8 ICP-MS	20	0.04	B		mg/L	0.01	0.06	12/22/17 18:26	mfm
Nickel, total	M200.8 ICP-MS	1	0.0454			mg/L	0.0006	0.003	12/20/17 19:11	msh
Potassium, dissolved	M200.7 ICP	1	6.2			mg/L	0.2	1	12/20/17 11:30	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: 59762

ACZ Sample ID: ***L41683-01***
Date Sampled: *12/06/17 15:00*
Date Received: *12/09/17*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	2	7.3			mg/L	0.4	2	12/21/17 18:15	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 1:15	aeh
Scandium, total	M200.7 ICP	2		U	*	mg/L	0.2	1	12/21/17 18:15	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/19/17 13:31	mfm
Selenium, total	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	12/28/17 8:55	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/19/17 13:31	mfm
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/28/17 8:55	msh
Sodium, dissolved	M200.7 ICP	1	113			mg/L	0.2	1	12/20/17 1:15	aeh
Sodium, total	M200.7 ICP	2	110			mg/L	0.4	2	12/21/17 18:15	aeh
Strontium, dissolved	M200.7 ICP	1	1.28			mg/L	0.005	0.03	12/20/17 1:15	aeh
Strontium, total	M200.7 ICP	2	1.27			mg/L	0.01	0.05	12/21/17 18:15	aeh
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/19/17 13:31	mfm
Thallium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/20/17 19:11	msh
Tin, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	01/12/18 17:19	msh
Tin, total	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	12/28/17 8:55	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/20/17 1:15	aeh
Titanium, total	M200.7 ICP	2	0.03	B		mg/L	0.01	0.05	12/21/17 18:15	aeh
Uranium, dissolved	M200.8 ICP-MS	1	0.0033			mg/L	0.0001	0.0005	12/19/17 13:31	mfm
Uranium, total	M200.8 ICP-MS	1	0.0045			mg/L	0.0001	0.0005	12/20/17 19:11	msh
Vanadium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0002	0.001	12/19/17 13:31	mfm
Vanadium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0002	0.001	12/20/17 19:11	msh
Zinc, dissolved	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/20/17 1:15	aeh
Zinc, total	M200.7 ICP	2	0.11			mg/L	0.02	0.1	12/21/17 18:15	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: 59762

ACZ Sample ID: ***L41683-01***
Date Sampled: *12/06/17 15:00*
Date Received: *12/09/17*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	134			mg/L	2	20	12/16/17 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	12/16/17 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	12/16/17 0:00	emk
Total Alkalinity		1	134			mg/L	2	20	12/16/17 0:00	emk
Chloride	M300.0 - Ion Chromatography	5	15.1			mg/L	2	10	12/20/17 20:24	las
Conductivity @25C	SM2510B	1	935			umhos/cm	1	10	12/16/17 19:57	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/19/17 18:00	wtc
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/19/17 18:38	wtc
Fluoride	M300.0 - Ion Chromatography	5	1.38			mg/L	0.25	1.25	12/20/17 20:24	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		235			mg/L	0.2	5	01/15/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	12/20/17 23:59	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	0.05	B	*	mg/L	0.05	0.2	12/21/17 13:46	krh
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	12/16/17 0:00	emk
pH measured at		1	21.2			C	0.1	0.1	12/16/17 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.05			mg/L	0.02	0.05	12/18/17 10:26	kea
Residue, Filterable (TDS) @180C	SM2540C	1	648			mg/L	10	20	12/11/17 16:44	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1	126			mg/L	5	20	12/12/17 11:37	mh
Sulfate	M300.0 - Ion Chromatography	5	333		*	mg/L	2	10	12/20/17 20:24	las

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: TRIP BLANK

ACZ Sample ID: ***L41683-02***
Date Sampled: *12/06/17 15:00*
Date Received: *12/09/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 12:35	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L41683***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350PBW1	PBW	12/16/17 15:09				U	mg/L		-20	20			
WG438350LCSW3	LCSW	12/16/17 15:25	WC171214-1	820.0001		789	mg/L	96	90	110			
WG438350LCSW6	LCSW	12/16/17 18:06	WC171214-1	820.0001		793	mg/L	97	90	110			
WG438350PBW2	PBW	12/16/17 18:14				3	mg/L		-20	20			
L41746-03DUP	DUP	12/16/17 20:43			120	120	mg/L				0	20	
WG438350LCSW9	LCSW	12/16/17 20:59	WC171214-1	820.0001		795	mg/L	97	90	110			
WG438350PBW3	PBW	12/16/17 21:08				3.8	mg/L		-20	20			
WG438350LCSW12	LCSW	12/17/17 1:12	WC171214-1	820.0001		799	mg/L	97	90	110			
WG438350PBW4	PBW	12/17/17 1:21				3.4	mg/L		-20	20			
WG438350LCSW15	LCSW	12/17/17 5:02	WC171214-1	820.0001		809	mg/L	99	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.941	mg/L	97	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.09	0.09			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	1.0019		1.082	mg/L	108	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	1.0019	U	1.093	mg/L	109	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	1.0019	U	1.109	mg/L	111	85	115	1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.917	mg/L	96	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.09	0.09			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.066	0.066			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	1.0019		1.061	mg/L	106	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	2.0038	3.37	9.126	mg/L	287	70	130			M1
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	2.0038	3.37	9.8	mg/L	321	70	130	7	20	M1

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438851													
WG438851ICV	ICV	12/22/17 17:23	MS171115-2	.02		.01791	mg/L	90	90	110			
WG438851ICB	ICB	12/22/17 17:26				U	mg/L		-0.0012	0.0012			
WG438851LFB	LFB	12/22/17 17:29	MS171129-3	.01		.0102	mg/L	102	85	115			
L41746-02AS	AS	12/22/17 18:41	MS171129-3	.01	U	.00941	mg/L	94	70	130			
L41746-02ASD	ASD	12/22/17 18:44	MS171129-3	.01	U	.00933	mg/L	93	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.02		.02032	mg/L	102	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.0012	0.0012			
WG438483LRB	LRB	12/28/17 8:34				U	mg/L		-0.00088	0.00088			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.01		.00962	mg/L	96	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.01	.2104	.1264	mg/L	-840	70	130			M3
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.01	.2104	.21542	mg/L	50	70	130	52	20	M3 R1
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00088	0.00088			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.01		.00946	mg/L	95	85	115			

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438851													
WG438851ICV	ICV	12/22/17 17:23	MS171115-2	.05		.05084	mg/L	102	90	110			
WG438851ICB	ICB	12/22/17 17:26				U	mg/L		-0.0006	0.0006			
WG438851LFB	LFB	12/22/17 17:29	MS171129-3	.0501		.04367	mg/L	87	85	115			
L41746-02AS	AS	12/22/17 18:41	MS171129-3	.0501	.0005	.04706	mg/L	93	70	130			
L41746-02ASD	ASD	12/22/17 18:44	MS171129-3	.0501	.0005	.05077	mg/L	100	70	130	8	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.05		.05196	mg/L	104	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.0006	0.0006			
WG438483LRB	LRB	12/28/17 8:34				U	mg/L		-0.00044	0.00044			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.0501		.04887	mg/L	98	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.0501	.1631	.21306	mg/L	100	70	130			
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.0501	.1631	.20946	mg/L	93	70	130	2	20	
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00044	0.00044			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.0501		.04672	mg/L	93	85	115			

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.9372	mg/L	97	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.009	0.009			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.5015		.4994	mg/L	100	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.5015	.016	.514	mg/L	99	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.5015	.016	.5244	mg/L	101	85	115	2	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438832													
WG438832ICV	ICV	12/22/17 12:01	II171206-1	2		1.934	mg/L	97	95	105			
WG438832ICB	ICB	12/22/17 12:08				.0035	mg/L		-0.009	0.009			
WG438581LRB	LRB	12/22/17 12:21				.003	mg/L		-0.0066	0.0066			
WG438581LFB	LFB	12/22/17 12:24	II171212-2	.5015		.5066	mg/L	101	85	115			
L41683-01LFM	LFM	12/22/17 12:34	II2XWATER	1.003	.043	1.0736	mg/L	103	70	130			
L41683-01LFMD	LFMD	12/22/17 12:37	II2XWATER	1.003	.043	1.1186	mg/L	108	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.04559	mg/L	91	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.00015	0.00015			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05035		.04572	mg/L	91	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05035	.00025	.04857	mg/L	96	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05035	.00025	.04202	mg/L	83	70	130	14	20	

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.05		.050772	mg/L	102	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.00015	0.00015			
WG438483LRB	LRB	12/28/17 8:34				U	mg/L		-0.00011	0.00011			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.05035		.047771	mg/L	95	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.05035	.00057	.038121	mg/L	75	70	130			
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.05035	.00057	.039749	mg/L	78	70	130	4	20	
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00011	0.00011			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.05035		.050594	mg/L	100	85	115			

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.991	mg/L	100	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.12	0.12			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.9993		1.012	mg/L	101	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.9993	U	.995	mg/L	100	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.9993	U	1.005	mg/L	101	85	115	1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.937	mg/L	97	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.12	0.12			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.088	0.088			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	.9993		1.014	mg/L	101	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	1.9986	U	1.975	mg/L	99	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	1.9986	U	1.941	mg/L	97	70	130	2	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		2.047	mg/L	102	95	105			
WG438518ICB	ICB	12/19/17 23:44				.012	mg/L		-0.03	0.03			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.5005		.523	mg/L	104	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.5005	.19	.692	mg/L	100	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.5005	.19	.71	mg/L	104	85	115	3	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		2.021	mg/L	101	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.03	0.03			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.022	0.022			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	.5005		.536	mg/L	107	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	1.001	.2	1.247	mg/L	105	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	1.001	.2	1.24	mg/L	104	70	130	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.04845	mg/L	97	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0003	0.0003			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05005		.04715	mg/L	94	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05005	.0002	.04791	mg/L	95	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05005	.0002	.04093	mg/L	81	70	130	16	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.04988	mg/L	100	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05005		.0499	mg/L	100	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05005	.0004	.05072	mg/L	101	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05005	.0004	.04982	mg/L	99	70	130	2	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438602													
WG438602ICV	ICV	12/20/17 10:12	II171129-1	100		100.85	mg/L	101	95	105			
WG438602ICB	ICB	12/20/17 10:18				U	mg/L		-0.3	0.3			
WG438602LFB	LFB	12/20/17 10:31	II171212-2	68.01098		72.35	mg/L	106	85	115			
L41683-01AS	AS	12/20/17 11:33	II171212-2	68.01098	79.9	146.9	mg/L	99	85	115			
L41683-01ASD	ASD	12/20/17 11:36	II171212-2	68.01098	79.9	150.1	mg/L	103	85	115	2	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	100		101.95	mg/L	102	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.3	0.3			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.22	0.22			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	68.01098		72.23	mg/L	106	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	136.0667	81.9	222.6	mg/L	103	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	136.0667	81.9	223.6	mg/L	104	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	20.06		20.3	mg/L	101	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.4	0.4			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	30.03		30.1	mg/L	100	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	30.03		32.6	mg/L	109	90	110			
L41653-01DUP	DUP	12/21/17 20:52			2280	2280	mg/L				0	20	
L41653-02AS	AS	12/21/17 21:28	WI171110-4	7507.5	14900	22200	mg/L	97	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438851													
WG438851ICV	ICV	12/22/17 17:23	MS171115-2	.05		.05181	mg/L	104	90	110			
WG438851ICB	ICB	12/22/17 17:26				U	mg/L		-0.0015	0.0015			
WG438851LFB	LFB	12/22/17 17:29	MS171129-3	.05		.04439	mg/L	89	85	115			
L41746-02AS	AS	12/22/17 18:41	MS171129-3	.05	U	.04602	mg/L	92	70	130			
L41746-02ASD	ASD	12/22/17 18:44	MS171129-3	.05	U	.04999	mg/L	100	70	130	8	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.05079	mg/L	102	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0015	0.0015			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.0011	0.0011			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05		.04925	mg/L	99	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05	.0072	.05478	mg/L	95	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05	.0072	.05452	mg/L	95	70	130	0	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05166	mg/L	103	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.00015	0.00015			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05005		.04839	mg/L	97	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05005	.00056	.04824	mg/L	95	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05005	.00056	.04137	mg/L	82	70	130	15	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.0515	mg/L	103	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.00015	0.00015			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00011	0.00011			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05005		.047362	mg/L	95	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05005	.01989	.069187	mg/L	98	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05005	.01989	.069531	mg/L	99	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW2	LCSW	12/16/17 15:14	PCN54306	1410		1440	umhos/cm	102	90	110			
WG438350LCSW5	LCSW	12/16/17 17:54	PCN54306	1410		1430	umhos/cm	101	90	110			
L41746-03DUP	DUP	12/16/17 20:43			817	816	umhos/cm				0	20	
WG438350LCSW8	LCSW	12/16/17 20:48	PCN54306	1410		1430	umhos/cm	101	90	110			
WG438350LCSW11	LCSW	12/17/17 1:01	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438350LCSW14	LCSW	12/17/17 4:51	PCN54306	1410		1420	umhos/cm	101	90	110			

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438851													
WG438851ICV	ICV	12/22/17 17:23	MS171115-2	.05		.05231	mg/L	105	90	110			
WG438851ICB	ICB	12/22/17 17:26				U	mg/L		-0.0012	0.0012			
WG438851LFB	LFB	12/22/17 17:29	MS171129-3	.0491		.04415	mg/L	90	85	115			
L41746-02AS	AS	12/22/17 18:41	MS171129-3	.0491	.0022	.04658	mg/L	90	70	130			
L41746-02ASD	ASD	12/22/17 18:44	MS171129-3	.0491	.0022	.05077	mg/L	99	70	130	9	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.05322	mg/L	106	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0012	0.0012			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00088	0.00088			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.0491		.05209	mg/L	106	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.0491	.005	.05323	mg/L	98	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.0491	.005	.05231	mg/L	96	70	130	2	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438567													
WG438567ICV	ICV	12/19/17 17:52	WI171213-6	.3006		.3154	mg/L	105	90	110			
WG438567ICB	ICB	12/19/17 17:53				U	mg/L		-0.003	0.003			
WG438492LRB	LRB	12/19/17 17:55				U	mg/L		-0.003	0.003			
WG438492LFB	LFB	12/19/17 17:55	WI171205-4	.2		.1995	mg/L	100	90	110			
L41594-01DUP	DUP	12/19/17 17:57			U	U	mg/L				0	20	RA
L41654-01LFM	LFM	12/19/17 17:59	WI171205-4	.2	U	.1954	mg/L	98	90	110			

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438567													
WG438567ICV	ICV	12/19/17 17:52	WI171213-6	.3006		.3154	mg/L	105	90	110			
WG438567ICB	ICB	12/19/17 17:53				U	mg/L		-0.003	0.003			
WG438569													
WG438485LRB	LRB	12/19/17 18:30				U	mg/L		-0.003	0.003			
WG438485LFB	LFB	12/19/17 18:31	WI171213-2	.2004		.1955	mg/L	98	90	110			
L41636-01LFM	LFM	12/19/17 18:35	WI171213-2	.2004	.006	.1938	mg/L	94	90	110			
L41636-02DUP	DUP	12/19/17 18:36			U	U	mg/L				0	20	RA

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ACZ Project ID: ***L41683***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	3.996		4.06	mg/L	102	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.05	0.05			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	1.5		1.54	mg/L	103	90	110			
L41653-01DUP	DUP	12/20/17 18:55			74.3	74.1	mg/L				0	20	
L41653-02AS	AS	12/20/17 19:31	WI171110-4	300	79.5	380	mg/L	100	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	1.5		1.5	mg/L	100	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.96	mg/L	98	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.3	0.3			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	1		1	mg/L	100	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	1	U	1	mg/L	100	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	1	U	.99	mg/L	99	85	115	1	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.95	mg/L	98	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.3	0.3			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.22	0.22			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	1		1	mg/L	100	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	2	U	2.02	mg/L	101	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	2	U	1.99	mg/L	99	70	130	1	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.949	mg/L	97	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.06	0.06			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	1.0011		1.022	mg/L	102	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	1.0011	.06	1.059	mg/L	100	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	1.0011	.06	1.079	mg/L	102	85	115	2	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.902	mg/L	95	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.06	0.06			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.044	0.044			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	1.0011		1.048	mg/L	105	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	2.0022	4.54	6.762	mg/L	111	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	2.0022	4.54	6.902	mg/L	118	70	130	2	20	

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ACZ Project ID: ***L41683***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05062	mg/L	101	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0003	0.0003			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.0496		.04765	mg/L	96	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.0496	.0002	.0501	mg/L	101	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.0496	.0002	.04299	mg/L	86	70	130	15	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.05		.05297	mg/L	106	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/28/17 8:34				U	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.0496		.04746	mg/L	96	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.0496	.0046	.05333	mg/L	98	70	130			
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.0496	.0046	.05681	mg/L	105	70	130	6	20	
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00022	0.00022			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.0496		.04766	mg/L	96	85	115			

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.9485	mg/L	97	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.024	0.024			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	1.001		.9765	mg/L	98	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	1.001	.209	1.195	mg/L	99	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	1.001	.209	1.201	mg/L	99	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.9145	mg/L	96	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.024	0.024			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.0176	0.0176			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	1.001		.9902	mg/L	99	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	2.002	.22	2.156	mg/L	97	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	2.002	.22	2.126	mg/L	95	70	130	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438602													
WG438602ICV	ICV	12/20/17 10:12	II171129-1	100		100.48	mg/L	100	95	105			
WG438602ICB	ICB	12/20/17 10:18				U	mg/L		-0.6	0.6			
WG438602LFB	LFB	12/20/17 10:31	II171212-2	50.18882		50.04	mg/L	100	85	115			
L41683-01AS	AS	12/20/17 11:33	II171212-2	50.18882	8.5	58.21	mg/L	99	85	115			
L41683-01ASD	ASD	12/20/17 11:36	II171212-2	50.18882	8.5	59.53	mg/L	102	85	115	2	20	

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ACZ Project ID: ***L41683***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	100		102	mg/L	102	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.6	0.6			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.44	0.44			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	50.18882		50.19	mg/L	100	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	100.1149	8.7	107.14	mg/L	98	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	100.1149	8.7	108.16	mg/L	99	70	130	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05007	mg/L	100	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0012	0.0012			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05005		.04859	mg/L	97	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05005	.0013	.05046	mg/L	98	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05005	.0013	.04392	mg/L	85	70	130	14	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.04982	mg/L	100	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0012	0.0012			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00088	0.00088			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05005		.04724	mg/L	94	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05005	.5891	.65455	mg/L	131	70	130			M3
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05005	.5891	.65503	mg/L	132	70	130	0	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438721													
WG438721CCV	CCV	12/21/17 11:12	HG171221-4	10		9.3	ng/L	93	76.5	123.4			
WG438721CCB	CCB	12/21/17 11:17				U	ng/L		-0.5	0.5			
WG438721PQV	PQV	12/21/17 11:21	HG171221-6	.5		.45	ng/L	90	70	130			
WG438721LFB	LFB	12/21/17 11:26	HG171221-5	2		2.07	ng/L	104	71	125			
L41683-01MS	MS	12/21/17 11:36	HG171221-5	2	U	2.02	ng/L	101	71	125			
L41683-01MSD	MSD	12/21/17 11:41	HG171221-5	2	U	2.1	ng/L	105	71	125	4	24	
WG438721CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438721CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L41683***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438726													
WG438726CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438726CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			
WG438726PQV	PQV	12/21/17 12:21	HG171221-6	.5		.5	ng/L	100	70	130			
WG438726LFB	LFB	12/21/17 12:26	HG171221-5	2		2.02	ng/L	101	71	125			
L41704-02MS	MS	12/21/17 12:45	HG171221-5	2	.3	2.21	ng/L	96	71	125			
L41704-02MSD	MSD	12/21/17 12:50	HG171221-5	2	.3	2.62	ng/L	116	71	125	17	24	
WG438726CCV2	CCV	12/21/17 13:14	HG171221-4	10		11.3	ng/L	113	76.5	123.4			
WG438726CCB2	CCB	12/21/17 13:19				U	ng/L		-0.5	0.5			
WG438726CCV3	CCV	12/21/17 14:12	HG171221-4	10		10.8	ng/L	108	76.5	123.4			
WG438726CCB3	CCB	12/21/17 14:17				U	ng/L		-0.5	0.5			
WG438726CCV4	CCV	12/21/17 14:29	HG171221-4	10		10.9	ng/L	109	76.5	123.4			
WG438726CCB4	CCB	12/21/17 14:34				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.02006		.01875	mg/L	93	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0015	0.0015			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.0501		.04665	mg/L	93	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.0501	U	.04819	mg/L	96	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.0501	U	.04118	mg/L	82	70	130	16	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.02006		.01984	mg/L	99	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0015	0.0015			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.0011	0.0011			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.0501		.05071	mg/L	101	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.0501	.0138	.06451	mg/L	101	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.0501	.0138	.06557	mg/L	103	70	130	2	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438851													
WG438851ICV	ICV	12/22/17 17:23	MS171115-2	.05		.05328	mg/L	107	90	110			
WG438851ICB	ICB	12/22/17 17:26				U	mg/L		-0.0018	0.0018			
WG438851LFB	LFB	12/22/17 17:29	MS171129-3	.0501		.04446	mg/L	89	85	115			
L41746-02AS	AS	12/22/17 18:41	MS171129-3	.0501	.0017	.04612	mg/L	89	70	130			
L41746-02ASD	ASD	12/22/17 18:44	MS171129-3	.0501	.0017	.0493	mg/L	95	70	130	7	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.05218	mg/L	104	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0018	0.0018			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00132	0.00132			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.0501		.05027	mg/L	100	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.0501	.0454	.09293	mg/L	95	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.0501	.0454	.09099	mg/L	91	70	130	2	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438692													
WG438692ICV	ICV	12/20/17 19:59	WI171215-1	2.416		2.336	mg/L	97	90	110			
WG438692ICB	ICB	12/20/17 20:00				U	mg/L		-0.02	0.02			
WG438696													
WG438696LFB	LFB	12/20/17 23:31	WI170705-5	2		1.956	mg/L	98	90	110			
L41545-09AS	AS	12/20/17 23:53	WI170705-5	2	U	2.057	mg/L	103	90	110			
L41545-10DUP	DUP	12/20/17 23:55			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438642													
WG438642ICV	ICV	12/21/17 12:42	WI171010-1	11.988		12.214	mg/L	102	90	110			
WG438642ICB	ICB	12/21/17 12:44				U	mg/L		-0.05	0.05			
WG438642LFB1	LFB	12/21/17 12:45	WI171219-5	10		10.309	mg/L	103	90	110			
WG438642LFB2	LFB	12/21/17 13:27	WI171219-5	10		10.185	mg/L	102	90	110			
L41631-01AS	AS	12/21/17 13:30	WI171219-5	10	1	11.159	mg/L	102	90	110			
L41643-01DUP	DUP	12/21/17 13:33			.05	U	mg/L				200	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW1	LCSW	12/16/17 15:12	PCN52664	6		6	units	100	5.9	6.1			
WG438350LCSW4	LCSW	12/16/17 17:52	PCN52664	6		6	units	100	5.9	6.1			
L41746-03DUP	DUP	12/16/17 20:43			8.3	8.3	units				0	20	
WG438350LCSW7	LCSW	12/16/17 20:46	PCN52664	6		6.1	units	102	5.9	6.1			
WG438350LCSW10	LCSW	12/17/17 0:59	PCN52664	6		6.1	units	102	5.9	6.1			
WG438350LCSW13	LCSW	12/17/17 4:49	PCN52664	6		6.1	units	102	5.9	6.1			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438390													
WG438107LRB	LRB	12/18/17 10:22				U	mg/L		-0.02	0.02			
WG438107LFB	LFB	12/18/17 10:23	WI171213-4	.5		.534	mg/L	107	90	110			
L41683-01LFM	LFM	12/18/17 10:27	WI171213-4	.5	.05	.581	mg/L	106	90	110			
L41679-01DUP	DUP	12/18/17 10:57			4.3	4.43	mg/L				3	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438602													
WG438602ICV	ICV	12/20/17 10:12	II171129-1	20		20.55	mg/L	103	95	105			
WG438602ICB	ICB	12/20/17 10:18				U	mg/L		-0.6	0.6			
WG438602LFB	LFB	12/20/17 10:31	II171212-2	99.97371		104.9	mg/L	105	85	115			
L41683-01AS	AS	12/20/17 11:33	II171212-2	99.97371	6.2	111	mg/L	105	85	115			
L41683-01ASD	ASD	12/20/17 11:36	II171212-2	99.97371	6.2	113.9	mg/L	108	85	115	3	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	20		20.32	mg/L	102	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.6	0.6			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.44	0.44			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	99.97371		104	mg/L	104	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	200.0188	7.3	211	mg/L	102	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	200.0188	7.3	212.6	mg/L	103	70	130	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG437884													
WG437884PBW	PBW	12/11/17 15:50				10	mg/L		-20	20			
WG437884LCSW	LCSW	12/11/17 15:52	PCN54732	260		274	mg/L	105	80	120			
L41693-01DUP	DUP	12/11/17 16:50			196	196	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG437930													
WG437930PBW	PBW	12/12/17 10:30				U	mg/L		-15	15			
WG437930LCSW	LCSW	12/12/17 10:33	PCN54732	160		155	mg/L	97	80	120			
L41683-01DUP	DUP	12/12/17 11:40			126	122	mg/L				3	10	

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		2.01	mg/L	101	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.3	0.3			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.9868		1.01	mg/L	102	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.9868	U	1	mg/L	101	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.9868	U	1.03	mg/L	104	85	115	3	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.96	mg/L	98	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.3	0.3			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.22	0.22			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	.9868		1.04	mg/L	105	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	1.9736	U	2.03	mg/L	101	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	1.9736	U	2.05	mg/L	102	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05012	mg/L	100	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0003	0.0003			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05005		.04833	mg/L	97	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05005	.0001	.05559	mg/L	111	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05005	.0001	.04773	mg/L	95	70	130	15	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.05		.05255	mg/L	105	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/28/17 8:34				U	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.05005		.0475	mg/L	95	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.05005	.0004	.04702	mg/L	93	70	130			
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.05005	.0004	.04712	mg/L	93	70	130	0	20	
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00022	0.00022			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.05005		.04505	mg/L	90	85	115			

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.02004		.01993	mg/L	99	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.00015	0.00015			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.01002		.009591	mg/L	96	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.01002	U	.008949	mg/L	89	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.01002	U	.008732	mg/L	87	70	130	2	20	

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.02004		.020901	mg/L	104	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.00015	0.00015			
WG438483LRB	LRB	12/28/17 8:34				.000089	mg/L		-0.00011	0.00011			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.01002		.009544	mg/L	95	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.01002	U	.009171	mg/L	92	70	130			
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.01002	U	.009477	mg/L	95	70	130	3	20	
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00011	0.00011			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.01002		.009663	mg/L	96	85	115			

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	100		104.43	mg/L	104	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.6	0.6			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	100.0023		109.3	mg/L	109	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	100.0023	113	215	mg/L	102	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	100.0023	113	215.8	mg/L	103	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	100		100.24	mg/L	100	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.6	0.6			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.44	0.44			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	100.0023		102.6	mg/L	103	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	200.0124	110	308.8	mg/L	99	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	200.0124	110	310	mg/L	100	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		2.0022	mg/L	100	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.015	0.015			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.5015		.5321	mg/L	106	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.5015	1.28	1.749	mg/L	94	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.5015	1.28	1.742	mg/L	92	85	115	0	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.9455	mg/L	97	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.015	0.015			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.011	0.011			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	.5015		.5029	mg/L	100	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	1.003	1.27	2.256	mg/L	99	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	1.003	1.27	2.262	mg/L	99	70	130	0	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	50		50.3	mg/L	101	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.4	0.4			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	30.03		30.5	mg/L	102	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	30.03		30	mg/L	100	90	110			
L41653-01DUP	DUP	12/21/17 20:52			U	U	mg/L				0	20	RA
L41653-02AS	AS	12/21/17 21:28	WI171110-4	7507.5	U	7110	mg/L	95	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05186	mg/L	104	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0003	0.0003			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.0501		.04844	mg/L	97	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.0501	U	.05193	mg/L	104	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.0501	U	.04452	mg/L	89	70	130	15	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.0532	mg/L	106	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.0501		.04956	mg/L	99	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.0501	.0002	.0515	mg/L	102	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.0501	.0002	.05168	mg/L	103	70	130	0	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439841													
WG439841ICV	ICV	01/12/18 17:10	MS171115-2	.04945		.0512	mg/L	104	90	110			
WG439841ICB	ICB	01/12/18 17:12				.00011	mg/L		-0.0003	0.0003			
WG439841LFB	LFB	01/12/18 17:14	MS171129-3	.04945		.05333	mg/L	108	85	115			
L41683-01AS	AS	01/12/18 17:21	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130			
L41683-01ASD	ASD	01/12/18 17:23	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130	0	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438947													
WG438947ICV	ICV	12/28/17 8:30	MS171115-2	.04945		.05033	mg/L	102	90	110			
WG438947ICB	ICB	12/28/17 8:32				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/28/17 8:34				.00019	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/28/17 8:36	MS171129-3	.04945		.04664	mg/L	94	85	115			
L41683-01LFM	LFM	12/28/17 8:57	MS171129-3	.04945	.0001	.01479	mg/L	30	70	130			M2
L41683-01LFMD	LFMD	12/28/17 8:59	MS171129-3	.04945	.0001	.02252	mg/L	45	70	130	41	20	M2 R1
WG438565LRB	LRB	12/28/17 9:05				U	mg/L		-0.00022	0.00022			
WG438565LFB	LFB	12/28/17 9:07	MS171129-3	.04945		.04641	mg/L	94	85	115			

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		2.0445	mg/L	102	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.015	0.015			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	1.003		1.033	mg/L	103	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	1.003	U	1.028	mg/L	102	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	1.003	U	1.029	mg/L	103	85	115	0	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.9795	mg/L	99	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.015	0.015			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.011	0.011			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	1.003		1.02	mg/L	102	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	2.006	.03	2.032	mg/L	100	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	2.006	.03	2.032	mg/L	100	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.04978	mg/L	100	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0003	0.0003			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05		.04876	mg/L	98	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05	U	.05278	mg/L	106	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05	U	.04562	mg/L	91	70	130	15	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.05156	mg/L	103	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0003	0.0003			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00022	0.00022			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05		.04988	mg/L	100	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05	.0045	.05888	mg/L	109	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05	.0045	.0589	mg/L	109	70	130	0	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438491													
WG438491ICV	ICV	12/19/17 11:55	MS171115-2	.05		.05161	mg/L	103	90	110			
WG438491ICB	ICB	12/19/17 11:58				U	mg/L		-0.0006	0.0006			
WG438491LFB	LFB	12/19/17 12:02	MS171129-3	.05005		.04849	mg/L	97	85	115			
L41663-03AS	AS	12/19/17 13:22	MS171129-3	.05005	.0008	.0528	mg/L	104	70	130			
L41663-03ASD	ASD	12/19/17 13:25	MS171129-3	.05005	.0008	.04494	mg/L	88	70	130	16	20	

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438680													
WG438680ICV	ICV	12/20/17 18:19	MS171115-2	.05		.05016	mg/L	100	90	110			
WG438680ICB	ICB	12/20/17 18:21				U	mg/L		-0.0006	0.0006			
WG438483LRB	LRB	12/20/17 18:23				U	mg/L		-0.00044	0.00044			
WG438483LFB	LFB	12/20/17 18:25	MS171129-3	.05005		.05055	mg/L	101	85	115			
L41683-01LFM	LFM	12/20/17 19:13	MS171129-3	.05005	.0014	.05138	mg/L	100	70	130			
L41683-01LFMD	LFMD	12/20/17 19:15	MS171129-3	.05005	.0014	.05125	mg/L	100	70	130	0	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438518													
WG438518ICV	ICV	12/19/17 23:38	II171129-1	2		1.957	mg/L	98	95	105			
WG438518ICB	ICB	12/19/17 23:44				U	mg/L		-0.03	0.03			
WG438518LFB	LFB	12/19/17 23:57	II171212-2	.4942		.548	mg/L	111	85	115			
L41683-01AS	AS	12/20/17 1:18	II171212-2	.4942	.06	.587	mg/L	107	85	115			
L41683-01ASD	ASD	12/20/17 1:21	II171212-2	.4942	.06	.587	mg/L	107	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438751													
WG438751ICV	ICV	12/21/17 17:36	II171206-1	2		1.977	mg/L	99	95	105			
WG438751ICB	ICB	12/21/17 17:42				U	mg/L		-0.03	0.03			
WG438581LRB	LRB	12/21/17 17:55				U	mg/L		-0.022	0.022			
WG438581LFB	LFB	12/21/17 17:59	II171212-2	.4942		.532	mg/L	108	85	115			
L41683-01LFM	LFM	12/21/17 18:18	II2XWATER	.9884	.11	1.133	mg/L	102	70	130			
L41683-01LFMD	LFMD	12/21/17 18:22	II2XWATER	.9884	.11	1.149	mg/L	104	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41683***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L41683-01	WG438751	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438947	Antimony, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	R1	RPD exceeded the method or laboratory acceptance limit. See Case Narrative.
	WG438567	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438569	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438680	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438696	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438642	Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438601	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438947	Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	R1	RPD exceeded the method or laboratory acceptance limit. See Case Narrative.
	WG438581	Total Hot Plate Digestion	M200.2 ICP	DJ	Sample dilution required due to insufficient sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID: L41683
Date Received: 12/09/2017 11:44
Received By: mjj
Date Printed: 12/11/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Report to: Company section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA27478	1.1	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID:	L41683
Date Received:	12/09/2017 11:44
Received By:	mjj
Date Printed:	12/11/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. 41683

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-~~5493~~

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr., Ste 350 Boise, ID 83706
Company: SPF Water Engineering	
E-mail: jthompson@spfwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name: Kurt Newbry	E-mail: Knewbry@SPFWater.com
Company: SPF Water Engineering	Telephone: (208) 520-9173

Invoice to:

Name: Same	Address: Same
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [✓]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** **State** ID **Zip code** 83706 **Time Zone** MTN

***Sampler's Signature:** _____

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF - 2017 - GW

PO#: Colico Monitoring Well Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2017-GW								
59762	12/6/2017 15:00	GW	9	X								

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* See attached list for parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kurt Newbry	12/7/17 14:20	JL	12/8/17 11:44

L41683 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.008 mg/L	$0.00
Lithium, total	M200.7 ICP	0.008 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$50.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$50.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Potassium, total	M200.7 ICP	0.2 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Sodium, total	M200.7 ICP	0.2 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Strontium, total	M200.7 ICP	0.005 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$17.00
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$17.00
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$90.00

REPAD.09.06.05.01 S/ mj D/ ## P/

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Quote Number: SPF-2017-GW

CONTRACT DETAILS

Pricing includes shipment of all standard sample containers and related paperwork by UPS Ground Service. Please allow three to five days for delivery when ordering containers. ACZ must be notified prior to receiving samples of all special requests such as electronic data deliverables or special reporting reqirements. The client will be charged for special sample containers or express shipping and additional charges may apply for non-standard requests.

This quotation is valid for six months from the bid date unless specified otherwise in the bid. All bids must be signed and returned to ACZ before the project(s) is received. The authorized signature represents acceptance of the pricing as well as the general terms and conditions of ACZ Laboratories, Inc. which may be downloaded from our web site at http://www.acz.com/PDF/termsconditions.pdf. Please note that MDL's in this quote may possibly increase due to sample matrix or samples with high TDS.

All orders that require shipping of coolers are subject to a minimum charge of $200.00. Local orders without shipping are subject to a minimum charge of $125.00. Samples may incur a $11.00/sample disposal fee for any samples deemed to be hazardous.

ACZ Representative (Authorized signature and date) _____

Client Representative (Authorized signature and date) _____

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 15, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

cc: Kurt Newbry

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41754

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 13, 2017. This project has been assigned to ACZ's project number, L41754. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L41754. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 14, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/20/17 17:18	wtc
Cyanide, WAD	SM4500-CN I- distillation								12/20/17 14:55	kea
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/19/17 12:07	kea
Total Hot Plate Digestion	M200.2 ICP-MS								12/22/17 13:17	mfm
Total Hot Plate Digestion	M200.2 ICP								12/21/17 16:52	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.25			mg/L	0.03	0.2	12/20/17 21:40	aeh
Aluminum, total	M200.7 ICP	1	4.78			mg/L	0.03	0.2	12/22/17 20:59	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.115			mg/L	0.0004	0.002	12/22/17 16:47	mfm
Antimony, total	M200.8 ICP-MS	1	0.0666		*	mg/L	0.0004	0.002	12/28/17 19:26	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0588			mg/L	0.0002	0.001	12/22/17 16:47	mfm
Arsenic, total	M200.8 ICP-MS	1	0.116			mg/L	0.0002	0.001	12/28/17 19:26	mfm
Barium, dissolved	M200.7 ICP	1	0.036			mg/L	0.003	0.02	12/20/17 21:40	aeh
Barium, total	M200.7 ICP	1	0.135			mg/L	0.003	0.02	12/22/17 20:59	aeh
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Beryllium, total	M200.8 ICP-MS	1	0.00056			mg/L	0.00005	0.0003	12/28/17 19:26	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/20/17 21:40	aeh
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/29/17 20:27	dcm
Boron, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	12/20/17 21:40	aeh
Boron, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	12/22/17 20:59	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Cadmium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Calcium, dissolved	M200.7 ICP	1	65.1			mg/L	0.1	0.5	12/20/17 21:40	aeh
Calcium, total	M200.7 ICP	1	91.0			mg/L	0.1	0.5	12/22/17 20:59	aeh
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/22/17 16:47	mfm
Chromium, total	M200.8 ICP-MS	1	0.300			mg/L	0.0005	0.002	12/28/17 19:26	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	0.00033			mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Cobalt, total	M200.8 ICP-MS	1	0.00637			mg/L	0.00005	0.0003	12/28/17 19:26	mfm
Copper, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0004	0.002	12/22/17 16:47	mfm
Copper, total	M200.8 ICP-MS	1	0.0234			mg/L	0.0004	0.002	12/28/17 19:26	mfm
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 21:40	aeh
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/22/17 20:59	aeh
Iron, dissolved	M200.7 ICP	1	0.07			mg/L	0.02	0.05	12/20/17 21:40	aeh
Iron, total	M200.7 ICP	1	35.5			mg/L	0.02	0.05	12/22/17 20:59	aeh
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Lead, total	M200.8 ICP-MS	1	0.0204			mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Lithium, dissolved	M200.7 ICP	1	0.339			mg/L	0.008	0.04	12/20/17 21:40	aeh
Lithium, total	M200.7 ICP	1	0.350			mg/L	0.008	0.04	12/22/17 20:59	aeh
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/20/17 21:40	aeh
Magnesium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	12/22/17 20:59	aeh
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/22/17 16:47	mfm
Manganese, total	M200.8 ICP-MS	1	0.206			mg/L	0.0004	0.002	12/28/17 19:26	mfm
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.6			ng/L	0.2	0.5	12/21/17 11:46	mfm
Mercury, total	M1631, Atomic Fluorescence	5	84			ng/L	1	3	12/21/17 14:24	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0965			mg/L	0.0005	0.003	12/22/17 16:47	mfm
Molybdenum, total	M200.8 ICP-MS	1	0.108			mg/L	0.0005	0.003	12/28/17 19:26	mfm
Nickel, dissolved	M200.8 ICP-MS	1	0.001	B		mg/L	0.0006	0.003	12/22/17 16:47	mfm
Nickel, total	M200.8 ICP-MS	1	0.147			mg/L	0.0006	0.003	12/28/17 19:26	mfm
Potassium, dissolved	M200.7 ICP	1	18.6			mg/L	0.2	1	12/20/17 21:40	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	21.3			mg/L	0.2	1	12/22/17 20:59	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 21:40	aeh
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/22/17 20:59	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	12/22/17 16:47	mfm
Selenium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	12/28/17 19:26	mfm
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Silver, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.00005	0.0003	01/03/18 19:09	mfm
Sodium, dissolved	M200.7 ICP	1	211			mg/L	0.2	1	12/20/17 21:40	aeh
Sodium, total	M200.7 ICP	1	211			mg/L	0.2	1	12/22/17 20:59	aeh
Strontium, dissolved	M200.7 ICP	1	1.35			mg/L	0.005	0.03	12/20/17 21:40	aeh
Strontium, total	M200.7 ICP	1	1.56			mg/L	0.005	0.03	12/22/17 20:59	aeh
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Tin, dissolved	M200.8 ICP-MS	1	0.0014		*	mg/L	0.0001	0.0005	01/12/18 17:24	msh
Tin, total	M200.8 ICP-MS	1	0.0016		*	mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/20/17 21:40	aeh
Titanium, total	M200.7 ICP	1	0.106			mg/L	0.005	0.03	12/22/17 20:59	aeh
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Uranium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	0.0082			mg/L	0.0002	0.001	12/22/17 16:47	mfm
Vanadium, total	M200.8 ICP-MS	1	0.016			mg/L	0.0002	0.001	12/28/17 19:26	mfm
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/20/17 21:40	aeh
Zinc, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/22/17 20:59	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	12/16/17 0:00	emk
Carbonate as CaCO3		1	45.4			mg/L	2	20	12/16/17 0:00	emk
Hydroxide as CaCO3		1	82.7			mg/L	2	20	12/16/17 0:00	emk
Total Alkalinity		1	128			mg/L	2	20	12/16/17 0:00	emk
Chloride	M300.0 - Ion Chromatography	5	31.1			mg/L	2	10	12/28/17 19:43	las
Conductivity @25C	SM2510B	1	1530			umhos/cm	1	10	12/16/17 21:40	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/22/17 22:29	pjb
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/20/17 20:10	pjb
Fluoride	M300.0 - Ion Chromatography	5	1.12	B	*	mg/L	0.25	1.25	12/21/17 22:22	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		163			mg/L	0.2	5	01/15/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.68			mg/L	0.02	0.1	12/21/17 22:37	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	1.20		*	mg/L	0.05	0.2	12/21/17 16:39	krh
pH (lab)	SM4500H+ B									
pH		1	11.3	H		units	0.1	0.1	12/16/17 0:00	emk
pH measured at		1	21.2			C	0.1	0.1	12/16/17 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.23		*	mg/L	0.02	0.05	12/21/17 19:32	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	920			mg/L	50	100	12/14/17 14:13	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1	138		*	mg/L	5	20	12/15/17 16:28	mh
Sulfate	M300.0 - Ion Chromatography	5	381			mg/L	2	10	12/21/17 22:22	las

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: TRIP BLANK

ACZ Sample ID: ***L41754-02***
Date Sampled: *12/11/17 00:00*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 13:29	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L41754***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350PBW1	PBW	12/16/17 15:09				U	mg/L		-20	20			
WG438350LCSW3	LCSW	12/16/17 15:25	WC171214-1	820.0001		789	mg/L	96	90	110			
WG438350LCSW6	LCSW	12/16/17 18:06	WC171214-1	820.0001		793	mg/L	97	90	110			
WG438350PBW2	PBW	12/16/17 18:14				3	mg/L		-20	20			
WG438350LCSW9	LCSW	12/16/17 20:59	WC171214-1	820.0001		795	mg/L	97	90	110			
WG438350PBW3	PBW	12/16/17 21:08				3.8	mg/L		-20	20			
L41780-06DUP	DUP	12/16/17 22:34			259	273	mg/L				5	20	
WG438350LCSW12	LCSW	12/17/17 1:12	WC171214-1	820.0001		799	mg/L	97	90	110			
WG438350PBW4	PBW	12/17/17 1:21				3.4	mg/L		-20	20			
WG438350LCSW15	LCSW	12/17/17 5:02	WC171214-1	820.0001		809	mg/L	99	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.961	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.09	0.09			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.0019		.985	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.0019	U	1.016	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.0019	U	1.011	mg/L	101	85	115	0	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.906	mg/L	95	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.09	0.09			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.066	0.066			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.0019		.975	mg/L	97	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.0019	U	1.023	mg/L	102	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.0019	U	1.022	mg/L	102	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02		.01793	mg/L	90	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.01		.01023	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.01	.1153	.1249	mg/L	96	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.01	.1153	.1246	mg/L	93	70	130	0	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.02		.01885	mg/L	94	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.01		.01036	mg/L	104	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.01	.0666	.07316	mg/L	66	70	130			M3
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.01	.0666	.07396	mg/L	74	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04995	mg/L	100	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0006	0.0006			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.0496	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.0588	.1078	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.0588	.1088	mg/L	100	70	130	1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05068	mg/L	101	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0006	0.0006			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00044	0.00044			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04987	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1164	.1666	mg/L	100	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1164	.1628	mg/L	93	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.9678	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.009	0.009			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5015		.4904	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5015	.079	.5748	mg/L	99	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5015	.079	.572	mg/L	98	85	115	0	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9412	mg/L	97	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.009	0.009			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.0066	0.0066			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5015		.4877	mg/L	97	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5015	U	.4876	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5015	U	.4946	mg/L	99	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04788	mg/L	96	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05035		.04686	mg/L	93	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05035	U	.04903	mg/L	97	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05035	U	.04795	mg/L	95	70	130	2	20	

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ACZ Project ID: ***L41754***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04915	mg/L	98	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05035		.04862	mg/L	97	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05035	.00056	.05077	mg/L	100	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05035	.00056	.05333	mg/L	105	70	130	5	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.994	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.12	0.12			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.9993		.973	mg/L	97	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.9993	U	.961	mg/L	96	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.9993	U	.997	mg/L	100	85	115	4	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439069													
WG439069ICV	ICV	12/29/17 20:03	II171101-5	2		1.935	mg/L	97	95	105			
WG439069ICB	ICB	12/29/17 20:09				U	mg/L		-0.12	0.12			
WG438764LRB	LRB	12/29/17 20:21				U	mg/L		-0.088	0.088			
WG438764LFB	LFB	12/29/17 20:24	II171220-5	.9993		.929	mg/L	93	85	115			
L41760-03LFM	LFM	12/29/17 20:39	II171220-5	.9993	U	.953	mg/L	95	70	130			
L41760-03LFMD	LFMD	12/29/17 20:42	II171220-5	.9993	U	.952	mg/L	95	70	130	0	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.007	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.03	0.03			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5005		.505	mg/L	101	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5005	.01	.517	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5005	.01	.505	mg/L	99	85	115	2	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.061	mg/L	103	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.03	0.03			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.022	0.022			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5005		.515	mg/L	103	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5005	U	.516	mg/L	103	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5005	U	.52	mg/L	104	70	130	1	20	

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ACZ Project ID: ***L41754***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05115	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05052	mg/L	101	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	U	.05023	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	U	.05063	mg/L	101	70	130	1	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05153	mg/L	103	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04885	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.0001	.0495	mg/L	99	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.0001	.04998	mg/L	100	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		101.7	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	68.03333		68.25	mg/L	100	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	68.03333	25.8	93.26	mg/L	99	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	68.03333	25.8	93.31	mg/L	99	85	115	0	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		100.3	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	68.03333		68.16	mg/L	100	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	68.03333	U	68.59	mg/L	101	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	68.03333	U	68.92	mg/L	101	70	130	0	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	20.06		20.2	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.8	mg/L	99	90	110			
L41754-01DUP	DUP	12/28/17 20:01			31.1	31.2	mg/L				0	20	
L41781-01AS	AS	12/28/17 20:37	WI171110-4	300.3	36.1	337	mg/L	100	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		30.5	mg/L	102	90	110			

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ACZ Project ID: ***L41754***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05104	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0015	0.0015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05		.05075	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05	.0008	.04919	mg/L	97	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05	.0008	.04903	mg/L	96	70	130	0	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05035	mg/L	101	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0015	0.0015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.0011	0.0011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05		.04905	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05	.3004	.3471	mg/L	93	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05	.3004	.3475	mg/L	94	70	130	0	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.0537	mg/L	107	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05211	mg/L	104	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.00033	.04947	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.00033	.04967	mg/L	99	70	130	0	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05339	mg/L	107	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.05031	mg/L	101	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.00637	.05708	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.00637	.05826	mg/L	104	70	130	2	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW2	LCSW	12/16/17 15:14	PCN54306	1410		1440	umhos/cm	102	90	110			
WG438350LCSW5	LCSW	12/16/17 17:54	PCN54306	1410		1430	umhos/cm	101	90	110			
WG438350LCSW8	LCSW	12/16/17 20:48	PCN54306	1410		1430	umhos/cm	101	90	110			
L41780-06DUP	DUP	12/16/17 22:34			737	739	umhos/cm				0	20	
WG438350LCSW11	LCSW	12/17/17 1:01	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438350LCSW14	LCSW	12/17/17 4:51	PCN54306	1410		1420	umhos/cm	101	90	110			

SPF Water Engineering

ACZ Project ID: ***L41754***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05108	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0491		.04937	mg/L	101	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0491	.0026	.04911	mg/L	95	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0491	.0026	.04922	mg/L	95	70	130	0	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05142	mg/L	103	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0491		.04994	mg/L	102	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0491	.0234	.0691	mg/L	93	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0491	.0234	.06877	mg/L	92	70	130	0	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438876													
WG438876ICV	ICV	12/22/17 21:42	WI171213-6	.3006		.3135	mg/L	104	90	110			
WG438876ICB	ICB	12/22/17 21:43				U	mg/L		-0.003	0.003			
WG438878													
WG438652LRB	LRB	12/22/17 22:18				U	mg/L		-0.003	0.003			
WG438652LFB	LFB	12/22/17 22:19	WI171220-3	.2		.19	mg/L	95	90	110			
L41728-01DUP	DUP	12/22/17 22:21			U	U	mg/L				0	20	RA
L41728-02LFM	LFM	12/22/17 22:23	WI171220-3	.2	U	.1823	mg/L	91	90	110			

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438690													
WG438690ICV	ICV	12/20/17 18:47	WI171213-6	.3006		.3173	mg/L	106	90	110			
WG438690ICB	ICB	12/20/17 18:48				U	mg/L		-0.003	0.003			
WG438693													
WG438647LRB	LRB	12/20/17 19:59				U	mg/L		-0.003	0.003			
WG438647LFB	LFB	12/20/17 20:00	WI171213-2	.2004		.2087	mg/L	104	90	110			
L41728-03LFM	LFM	12/20/17 20:04	WI171213-2	.2004	U	.1945	mg/L	97	90	110			
L41728-04DUP	DUP	12/20/17 20:05			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L41754***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	3.996		4.06	mg/L	102	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.05	0.05			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	1.5		1.54	mg/L	103	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	1.5		1.5	mg/L	100	90	110			
L41781-01AS	AS	12/21/17 4:46	WI171110-4	15	22.8	37.8	mg/L	100	90	110			
L41754-01DUP	DUP	12/21/17 22:40			1.12	1.13	mg/L				1	20	RA

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.02	mg/L	101	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1		.97	mg/L	97	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1	U	1.01	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1	U	1.01	mg/L	101	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.02	mg/L	101	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1		.99	mg/L	99	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1	U	.97	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1	U	1.01	mg/L	101	70	130	4	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.964	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.06	0.06			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.0011		1	mg/L	100	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.0011	2.5	3.367	mg/L	87	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.0011	2.5	3.393	mg/L	89	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.922	mg/L	96	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.06	0.06			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.044	0.044			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.0011		.991	mg/L	99	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.0011	U	.995	mg/L	99	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.0011	U	1.005	mg/L	100	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05209	mg/L	104	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0496		.04977	mg/L	100	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0496	U	.05095	mg/L	103	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0496	U	.05168	mg/L	104	70	130	1	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05253	mg/L	105	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0496		.04936	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0496	.0204	.07038	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0496	.0204	.07124	mg/L	103	70	130	1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.9652	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.024	0.024			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.001		.9579	mg/L	96	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.001	U	.9733	mg/L	97	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.001	U	.9671	mg/L	97	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9365	mg/L	97	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.024	0.024			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.0176	0.0176			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.001		.9591	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.001	U	.9704	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.001	U	.9843	mg/L	98	70	130	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		101.55	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	50.05743		46.71	mg/L	93	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	50.05743	14.6	61.02	mg/L	93	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	50.05743	14.6	61.08	mg/L	93	85	115	0	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		99.92	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	50.05743		46.51	mg/L	93	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	50.05743	U	46.7	mg/L	93	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	50.05743	U	47.14	mg/L	94	70	130	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05228	mg/L	105	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05209	mg/L	104	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	U	.05046	mg/L	101	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	U	.05016	mg/L	100	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05212	mg/L	104	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.0502	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.2062	.2595	mg/L	106	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.2062	.2617	mg/L	111	70	130	1	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438721													
WG438721CCV	CCV	12/21/17 11:12	HG171221-4	10		9.3	ng/L	93	76.5	123.4			
WG438721CCB	CCB	12/21/17 11:17				U	ng/L		-0.5	0.5			
WG438721PQV	PQV	12/21/17 11:21	HG171221-6	.5		.45	ng/L	90	70	130			
WG438721LFB	LFB	12/21/17 11:26	HG171221-5	2		2.07	ng/L	104	71	125			
L41683-01MS	MS	12/21/17 11:36	HG171221-5	2	U	2.02	ng/L	101	71	125			
L41683-01MSD	MSD	12/21/17 11:41	HG171221-5	2	U	2.1	ng/L	105	71	125	4	24	
WG438721CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438721CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L41754***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438726													
WG438726CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438726CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			
WG438726PQV	PQV	12/21/17 12:21	HG171221-6	.5		.5	ng/L	100	70	130			
WG438726LFB	LFB	12/21/17 12:26	HG171221-5	2		2.02	ng/L	101	71	125			
L41704-02MS	MS	12/21/17 12:45	HG171221-5	2	.3	2.21	ng/L	96	71	125			
L41704-02MSD	MSD	12/21/17 12:50	HG171221-5	2	.3	2.62	ng/L	116	71	125	17	24	
WG438726CCV2	CCV	12/21/17 13:14	HG171221-4	10		11.3	ng/L	113	76.5	123.4			
WG438726CCB2	CCB	12/21/17 13:19				U	ng/L		-0.5	0.5			
WG438726CCV3	CCV	12/21/17 14:12	HG171221-4	10		10.8	ng/L	108	76.5	123.4			
WG438726CCB3	CCB	12/21/17 14:17				U	ng/L		-0.5	0.5			
WG438726CCV4	CCV	12/21/17 14:29	HG171221-4	10		10.9	ng/L	109	76.5	123.4			
WG438726CCB4	CCB	12/21/17 14:34				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02006		.01953	mg/L	97	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0015	0.0015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.04972	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.0965	.1465	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.0965	.1487	mg/L	104	70	130	1	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.02006		.01899	mg/L	95	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0015	0.0015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.0011	0.0011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04779	mg/L	95	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1081	.1599	mg/L	103	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1081	.1638	mg/L	111	70	130	2	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05209	mg/L	104	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0018	0.0018			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.04966	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.001	.0471	mg/L	92	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.001	.04811	mg/L	94	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05176	mg/L	104	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0018	0.0018			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00132	0.00132			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04901	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1472	.1924	mg/L	90	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1472	.1907	mg/L	87	70	130	1	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438798													
WG438798ICV	ICV	12/21/17 20:15	WI171215-1	2.416		2.336	mg/L	97	90	110			
WG438798ICB	ICB	12/21/17 20:16				U	mg/L		-0.02	0.02			
WG438802													
WG438802LFB	LFB	12/21/17 22:34	WI170705-5	2		1.977	mg/L	99	90	110			
L41704-02AS	AS	12/21/17 22:36	WI170705-5	2	.14	2.199	mg/L	103	90	110			
L41754-01DUP	DUP	12/21/17 22:39			.68	.678	mg/L				0	20	

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438757													
WG438757ICV	ICV	12/21/17 14:35	WI171221-2	11.988		12.351	mg/L	103	90	110			
WG438757ICB	ICB	12/21/17 14:36				U	mg/L		-0.05	0.05			
WG438769													
WG438769LFB1	LFB	12/21/17 15:58	WI171219-5	10		10.687	mg/L	107	90	110			
L41728-03AS	AS	12/21/17 16:22	WI171219-5	10	.23	10.522	mg/L	103	90	110			
L41728-04DUP	DUP	12/21/17 16:25			.25	.252	mg/L				1	20	RA
WG438769LFB2	LFB	12/21/17 16:41	WI171219-5	10		10.447	mg/L	104	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW1	LCSW	12/16/17 15:12	PCN52664	6		6	units	100	5.9	6.1			
WG438350LCSW4	LCSW	12/16/17 17:52	PCN52664	6		6	units	100	5.9	6.1			
WG438350LCSW7	LCSW	12/16/17 20:46	PCN52664	6		6.1	units	102	5.9	6.1			
L41780-06DUP	DUP	12/16/17 22:34			8.6	8.6	units				0	20	
WG438350LCSW10	LCSW	12/17/17 0:59	PCN52664	6		6.1	units	102	5.9	6.1			
WG438350LCSW13	LCSW	12/17/17 4:49	PCN52664	6		6.1	units	102	5.9	6.1			

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ACZ Project ID: ***L41754***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438795													
WG438795ICV	ICV	12/21/17 18:30	WI171105-7	.65228		.675	mg/L	103	90	110			
WG438795ICB	ICB	12/21/17 18:32				U	mg/L		-0.02	0.02			
WG438796													
WG438495LRB	LRB	12/21/17 19:16				U	mg/L		-0.02	0.02			
WG438495LFB	LFB	12/21/17 19:17	WI171213-4	.5		.493	mg/L	99	90	110			
L41742-01LFM	LFM	12/21/17 19:23	WI171213-4	.5	U	.5	mg/L	100	90	110			
L41742-02DUP	DUP	12/21/17 19:25			.03	.024	mg/L				22	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	20		20.41	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	100.0094		98.28	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	100.0094	3.8	103.9	mg/L	100	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	100.0094	3.8	103.2	mg/L	99	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	20		20.08	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	100.0094		97.8	mg/L	98	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	100.0094	U	98.13	mg/L	98	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	100.0094	U	98.76	mg/L	99	70	130	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438180													
WG438180PBW	PBW	12/14/17 13:30				10	mg/L		-20	20			
WG438180LCSW	LCSW	12/14/17 13:33	PCN54731	260		262	mg/L	101	80	120			
L41754-01DUP	DUP	12/14/17 14:17			920	880	mg/L				4	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438313													
WG438313PBW	PBW	12/15/17 15:40				U	mg/L		-15	15			
WG438313LCSW	LCSW	12/15/17 15:43	PCN54731	160		158	mg/L	99	80	120			
L41794-07DUP	DUP	12/15/17 17:00			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L41754***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.04	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.9868		.98	mg/L	99	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.9868	U	1.01	mg/L	102	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.9868	U	1.01	mg/L	102	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.99	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.9868		1.01	mg/L	102	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.9868	U	1.01	mg/L	102	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.9868	U	1.02	mg/L	103	70	130	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05167	mg/L	103	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.04954	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.0015	.05079	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.0015	.05119	mg/L	99	70	130	1	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04603	mg/L	92	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04865	mg/L	97	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.0015	.04962	mg/L	96	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.0015	.0482	mg/L	93	70	130	3	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02004		.02027	mg/L	101	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.01002		.01057	mg/L	105	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.01002	U	.008148	mg/L	81	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.01002	U	.008441	mg/L	84	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439293													
WG439293ICV	ICV	01/03/18 19:01	MS171115-2	.02004		.02022	mg/L	101	90	110			
WG439293ICB	ICB	01/03/18 19:03				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	01/03/18 19:05				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	01/03/18 19:07	MS171129-3	.01002		.00917	mg/L	92	85	115			
L41754-01LFM	LFM	01/03/18 19:11	MS171129-3	.01002	.0002	.009022	mg/L	88	70	130			
L41754-01LFMD	LFMD	01/03/18 19:13	MS171129-3	.01002	.0002	.009098	mg/L	89	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		102.28	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	100.0062		99.42	mg/L	99	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	100.0062	12.9	113	mg/L	100	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	100.0062	12.9	112.7	mg/L	100	85	115	0	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		97.99	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	100.0062		95.89	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	100.0062	U	96.82	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	100.0062	U	97.18	mg/L	97	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.019	mg/L	101	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.015	0.015			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5015		.4917	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5015	.309	.796	mg/L	97	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5015	.309	.7958	mg/L	97	85	115	0	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9672	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.015	0.015			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.011	0.011			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5015		.4823	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5015	U	.4877	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5015	U	.49	mg/L	98	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	50		50.3	mg/L	101	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.4	0.4			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	30.03		30.5	mg/L	102	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	30.03		30	mg/L	100	90	110			
L41781-01AS	AS	12/21/17 4:46	WI171110-4	300.3	U	296	mg/L	99	90	110			
L41754-01DUP	DUP	12/21/17 22:40			381	383	mg/L				1	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05359	mg/L	107	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.05091	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	U	.0518	mg/L	103	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	U	.05277	mg/L	105	70	130	2	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05387	mg/L	108	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.0501	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.0001	.05048	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.0001	.05125	mg/L	102	70	130	2	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439841													
WG439841ICV	ICV	01/12/18 17:10	MS171115-2	.04945		.0512	mg/L	104	90	110			
WG439841ICB	ICB	01/12/18 17:12				.00011	mg/L		-0.0003	0.0003			
WG439841LFB	LFB	01/12/18 17:14	MS171129-3	.04945		.05333	mg/L	108	85	115			
L41683-01AS	AS	01/12/18 17:21	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130			
L41683-01ASD	ASD	01/12/18 17:23	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130	0	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.04945		.04523	mg/L	91	90	110			
WG439029ICB	ICB	12/28/17 18:05				.00016	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.04945		.04747	mg/L	96	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.04945	.0016	.02729	mg/L	52	70	130			M2
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.04945	.0016	.03147	mg/L	60	70	130	14	20	M2

SPF Water Engineering

ACZ Project ID: ***L41754***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.05	mg/L	103	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.015	0.015			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.003		1.013	mg/L	101	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.003	U	1.026	mg/L	102	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.003	U	1.026	mg/L	102	85	115	0	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.0105	mg/L	101	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.015	0.015			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.011	0.011			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.003		1.01	mg/L	101	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.003	U	1.009	mg/L	101	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.003	U	1.028	mg/L	102	70	130	2	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05174	mg/L	103	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05		.05102	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05	U	.05419	mg/L	108	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05	U	.05447	mg/L	109	70	130	1	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.0524	mg/L	105	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05		.05161	mg/L	103	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05	.0018	.05506	mg/L	107	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05	.0018	.05593	mg/L	108	70	130	2	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04965	mg/L	99	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0006	0.0006			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05007	mg/L	100	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.0082	.05803	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.0082	.05892	mg/L	101	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04962	mg/L	99	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0006	0.0006			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00044	0.00044			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04923	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.016	.06485	mg/L	98	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.016	.06549	mg/L	99	70	130	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.002	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.03	0.03			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.4942		.511	mg/L	103	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.4942	U	.527	mg/L	107	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.4942	U	.522	mg/L	106	85	115	1	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.962	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.03	0.03			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.022	0.022			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.4942		.51	mg/L	103	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.4942	U	.513	mg/L	104	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.4942	U	.516	mg/L	104	70	130	1	20	

SPF Water Engineering ACZ Project ID: ***L41754***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L41754-01	WG439029	Antimony, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438849	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG438878	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438693	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438601	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438769	Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438796	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438313	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG439029	Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

SPF Water Engineering ACZ Project ID: ***L41754***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID: L41754
Date Received: 12/13/2017 11:59
Received By:
Date Printed: 12/14/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA27494	3.9	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID:	L41754
Date Received:	12/13/2017 11:59
Received By:	
Date Printed:	12/14/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L41754

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr. Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@SPFwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name: Kurt Newbry	E-mail: Knewbry@SPFwater.com
Company: SPF Water Engineering	Telephone: (208) 520-9173

Invoice to:

Name: Same	Address: Same
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry Sampler's Site Information State ID Zip code 83706 Time Zone MTN

*Sampler's Signature: _____ *I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF - 2017-GW

PO#: Calico Monitoring Well Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SPF-2017-GW							
GMW17-32	12/11/17 16:32	GW	9	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* See attached for Parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kurt Newbry	12/12/17 12:30	BCE	12/13/17 1159

L41754 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

REPAD.09.06.05.01 S/ mj D/ ## P/

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 05, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

cc: Kurt Newbry

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41826

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 16, 2017. This project has been assigned to ACZ's project number, L41826. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L41826. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 04, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/27/17 14:03	wtc
Cyanide, WAD	SM4500-CN I- distillation								12/27/17 12:18	las
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/20/17 15:59	kea
Total Hot Plate Digestion	M200.2 ICP-MS								12/27/17 17:00	msh
Total Hot Plate Digestion	M200.2 ICP								12/27/17 13:36	dcm/scp

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/21/17 19:20	aeh
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	01/03/18 1:57	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.0217			mg/L	0.0004	0.002	12/28/17 20:29	msh
Antimony, total	M200.8 ICP-MS	1	0.0244			mg/L	0.0004	0.002	12/29/17 15:09	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.106			mg/L	0.0002	0.001	12/28/17 20:29	msh
Arsenic, total	M200.8 ICP-MS	1	0.107			mg/L	0.0002	0.001	12/29/17 15:09	mfm
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/22/17 20:36	dcm
Barium, total	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	01/03/18 19:24	aeh
Beryllium, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/28/17 20:29	msh
Beryllium, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/21/17 19:20	aeh
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	01/03/18 1:57	aeh
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/21/17 19:20	aeh
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	01/03/18 1:57	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Calcium, dissolved	M200.7 ICP	1	22.8			mg/L	0.1	0.5	12/21/17 19:20	aeh
Calcium, total	M200.7 ICP	1	24.1			mg/L	0.1	0.5	01/03/18 1:57	aeh
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/28/17 20:29	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/29/17 15:09	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	0.0007			mg/L	0.00005	0.0003	12/28/17 20:29	msh
Cobalt, total	M200.8 ICP-MS	1	0.00072			mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	12/28/17 20:29	msh
Copper, total	M200.8 ICP-MS	1	0.0005	B	*	mg/L	0.0004	0.002	12/29/17 15:09	mfm
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/21/17 19:20	aeh
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	01/03/18 19:24	aeh
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/21/17 19:20	aeh
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	01/03/18 1:57	aeh
Lead, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Lithium, dissolved	M200.7 ICP	1	0.086			mg/L	0.008	0.04	12/21/17 19:20	aeh
Lithium, total	M200.7 ICP	1	0.080			mg/L	0.008	0.04	01/03/18 1:57	aeh
Magnesium, dissolved	M200.7 ICP	1	3.7			mg/L	0.2	1	12/21/17 19:20	aeh
Magnesium, total	M200.7 ICP	1	3.7			mg/L	0.2	1	01/03/18 1:57	aeh
Manganese, dissolved	M200.8 ICP-MS	1	0.0453			mg/L	0.0004	0.002	12/28/17 20:29	msh
Manganese, total	M200.8 ICP-MS	1	0.050		*	mg/L	0.0004	0.002	12/29/17 15:09	mfm
Mercury, dissolved	M1631, Atomic Fluorescence	1	4.1			ng/L	0.2	0.5	12/21/17 11:51	mfm
Mercury, total	M1631, Atomic Fluorescence	1	11.5			ng/L	0.2	0.5	12/21/17 14:02	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0171			mg/L	0.0005	0.003	12/28/17 20:29	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0173			mg/L	0.0005	0.003	12/29/17 15:09	mfm
Nickel, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	12/28/17 20:29	msh
Nickel, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	12/29/17 15:09	mfm
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.2	1	12/21/17 19:20	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.3			mg/L	0.2	1	01/03/18 1:57	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/21/17 19:20	aeh
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	01/03/18 1:57	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0105			mg/L	0.0001	0.0003	12/28/17 20:29	msh
Selenium, total	M200.8 ICP-MS	1	0.0106			mg/L	0.0001	0.0003	12/29/17 15:09	mfm
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/28/17 20:29	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Sodium, dissolved	M200.7 ICP	1	62.9			mg/L	0.2	1	12/21/17 19:20	aeh
Sodium, total	M200.7 ICP	1	63.7			mg/L	0.2	1	01/03/18 1:57	aeh
Strontium, dissolved	M200.7 ICP	1	0.198			mg/L	0.005	0.03	12/21/17 19:20	aeh
Strontium, total	M200.7 ICP	1	0.198			mg/L	0.005	0.03	01/03/18 1:57	aeh
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/28/17 20:29	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Titanium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	12/21/17 19:20	aeh
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	01/03/18 1:57	aeh
Uranium, dissolved	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	12/28/17 20:29	msh
Uranium, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	0.0102			mg/L	0.0002	0.001	12/28/17 20:29	msh
Vanadium, total	M200.8 ICP-MS	1	0.0105			mg/L	0.0002	0.001	12/29/17 15:09	mfm
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/22/17 20:36	dcm
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	01/03/18 1:57	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	104			mg/L	2	20	12/22/17 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	12/22/17 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	12/22/17 0:00	emk
Total Alkalinity		1	104		*	mg/L	2	20	12/22/17 0:00	emk
Chloride	M300.0 - Ion Chromatography	1	10.1			mg/L	0.4	2	12/28/17 23:54	las
Conductivity @25C	SM2510B	1	477			umhos/cm	1	10	12/22/17 16:05	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/27/17 18:11	wtc
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/27/17 18:44	wtc
Fluoride	M300.0 - Ion Chromatography	1	2.01			mg/L	0.05	0.25	12/28/17 23:54	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		72			mg/L	0.2	5	01/05/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.46			mg/L	0.02	0.1	12/23/17 0:49	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1		U		mg/L	0.05	0.2	12/29/17 11:14	wtc
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	12/22/17 0:00	emk
pH measured at		1	21.5			C	0.1	0.1	12/22/17 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.10		*	mg/L	0.02	0.05	12/22/17 0:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	12/18/17 14:19	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	12/20/17 16:18	enb
Sulfate	M300.0 - Ion Chromatography	1	86.4			mg/L	0.4	2	12/28/17 23:54	las

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: TRIP BLANK

ACZ Sample ID: ***L41826-02***
Date Sampled: *12/14/17 00:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 14:07	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L41826***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847PBW1	PBW	12/22/17 15:08				U	mg/L		-20	20			
WG438847LCSW3	LCSW	12/22/17 15:24	WC171214-1	820.0001		783	mg/L	95	90	110			
L41831-01DUP	DUP	12/22/17 16:39			U	U	mg/L				0	20	RA
WG438847LCSW6	LCSW	12/22/17 18:28	WC171214-1	820.0001		790	mg/L	96	90	110			
WG438847PBW2	PBW	12/22/17 18:36				3.6	mg/L		-20	20			
WG438847LCSW9	LCSW	12/22/17 21:18	WC171214-1	820.0001		797	mg/L	97	90	110			
WG438847PBW3	PBW	12/22/17 21:26				3.7	mg/L		-20	20			
WG438847LCSW12	LCSW	12/22/17 23:43	WC171214-1	820.0001		795	mg/L	97	90	110			
WG438847PBW4	PBW	12/22/17 23:51				4	mg/L		-20	20			
WG438847LCSW15	LCSW	12/23/17 1:08	WC171214-1	820.0001		802	mg/L	98	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.936	mg/L	97	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.09	0.09			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.0019		1.008	mg/L	101	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.0019	U	1.045	mg/L	104	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.0019	U	1.053	mg/L	105	85	115	1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.901	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.09	0.09			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.066	0.066			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.0019		1.007	mg/L	101	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.0019	.3	1.394	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.0019	.3	1.372	mg/L	107	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02		.02042	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.01		.00921	mg/L	92	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.01	U	.00946	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.01	U	.00951	mg/L	95	70	130	1	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02		.01947	mg/L	97	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.01		.01091	mg/L	109	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.01	U	.01007	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.01	U	.0111	mg/L	111	70	130	10	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05057	mg/L	101	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0006	0.0006			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04729	mg/L	94	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0004	.05031	mg/L	100	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0004	.0502	mg/L	99	70	130	0	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05035	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0006	0.0006			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00044	0.00044			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05192	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.0013	.0533	mg/L	104	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.0013	.05318	mg/L	104	70	130	0	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438843													
WG438843ICV	ICV	12/22/17 19:15	II171220-1	2		1.9558	mg/L	98	95	105			
WG438843ICB	ICB	12/22/17 19:20				U	mg/L		-0.009	0.009			
WG438843LFB	LFB	12/22/17 19:33	II171220-5	.5015		.5082	mg/L	101	85	115			
L37475-30AS	AS	12/22/17 20:18	II171220-5	.5015	.027	.5316	mg/L	101	85	115			
L37475-30ASD	ASD	12/22/17 20:21	II171220-5	.5015	.027	.5392	mg/L	102	85	115	1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439247													
WG439247ICV	ICV	01/03/18 18:29	II171206-1	2		2.0532	mg/L	103	95	105			
WG439247ICB	ICB	01/03/18 18:35				U	mg/L		-0.009	0.009			
WG438891LRB	LRB	01/03/18 18:47				U	mg/L		-0.0066	0.0066			
WG438891LFB	LFB	01/03/18 18:51	II171220-5	.5015		.5306	mg/L	106	85	115			
L41819-02LFM	LFM	01/03/18 19:12	II171220-5	.5015	.035	.5579	mg/L	104	70	130			
L41819-02LFMD	LFMD	01/03/18 19:15	II171220-5	.5015	.035	.5507	mg/L	103	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.047181	mg/L	94	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05035		.046128	mg/L	92	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05035	U	.047913	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05035	U	.047046	mg/L	93	70	130	2	20	

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ACZ Project ID: ***L41826***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04729	mg/L	95	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05035		.0504	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05035	.0425	.09626	mg/L	107	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05035	.0425	.09778	mg/L	110	70	130	2	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.975	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.12	0.12			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.9993		.985	mg/L	99	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.9993	U	.984	mg/L	98	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.9993	U	1.014	mg/L	101	85	115	3	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.938	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.12	0.12			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.088	0.088			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.9993		1.005	mg/L	101	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.9993	U	1.033	mg/L	103	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.9993	U	.999	mg/L	100	70	130	3	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.965	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				.016	mg/L		-0.03	0.03			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.5005		.497	mg/L	99	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.5005	.01	.511	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.5005	.01	.518	mg/L	101	85	115	1	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.991	mg/L	100	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.03	0.03			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.022	0.022			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.5005		.503	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.5005	.19	.687	mg/L	99	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.5005	.19	.696	mg/L	101	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05007	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04636	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	U	.04704	mg/L	94	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	U	.0472	mg/L	94	70	130	0	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04971	mg/L	99	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05124	mg/L	102	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0715	.12308	mg/L	103	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0715	.12302	mg/L	103	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		98.09	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	68.03333		66.64	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	68.03333	44.5	110.1	mg/L	96	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	68.03333	44.5	111	mg/L	98	85	115	1	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		99.34	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	68.03333		69.79	mg/L	103	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	68.03333	233	315.5	mg/L	121	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	68.03333	233	304.6	mg/L	105	70	130	4	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	20.06		20.2	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.8	mg/L	99	90	110			
L41826-01DUP	DUP	12/29/17 0:12			10.1	10	mg/L				1	20	
L41828-01AS	AS	12/29/17 0:48	WI171110-4	6006	158	6220	mg/L	101	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		30.5	mg/L	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L41826***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05134	mg/L	103	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0015	0.0015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05		.04634	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05	U	.04867	mg/L	97	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05	U	.04875	mg/L	98	70	130	0	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05046	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0015	0.0015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.0011	0.0011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05		.0502	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05	.006	.055	mg/L	98	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05	.006	.0537	mg/L	95	70	130	2	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.052407	mg/L	105	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04648	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.00019	.046732	mg/L	93	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.00019	.047001	mg/L	94	70	130	1	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05254	mg/L	105	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.0524	mg/L	105	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.3098	.3596	mg/L	100	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.3098	.36	mg/L	100	70	130	0	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847LCSW2	LCSW	12/22/17 15:13	PCN54306	1410		1450	umhos/cm	103	90	110			
L41831-01DUP	DUP	12/22/17 16:39			24900	24800	umhos/cm				0	20	
WG438847LCSW5	LCSW	12/22/17 18:17	PCN54306	1410		1440	umhos/cm	102	90	110			
WG438847LCSW8	LCSW	12/22/17 21:06	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438847LCSW11	LCSW	12/22/17 23:32	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438847LCSW14	LCSW	12/23/17 0:57	PCN54306	1410		1410	umhos/cm	100	90	110			

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ACZ Project ID: ***L41826***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05309	mg/L	106	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0491		.04767	mg/L	97	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0491	.01	.05801	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0491	.01	.05774	mg/L	97	70	130	0	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05096	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0491		.05095	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0491	54.6	53.58	mg/L	-2077	70	130			M3
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0491	54.6	53.36	mg/L	-2525	70	130	0	20	M3

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438950													
WG438950ICV	ICV	12/27/17 17:57	WI171213-6	.3006		.3125	mg/L	104	90	110			
WG438950ICB	ICB	12/27/17 17:58				U	mg/L		-0.003	0.003			
WG438913LRB	LRB	12/27/17 17:59				U	mg/L		-0.003	0.003			
WG438913LFB	LFB	12/27/17 17:59	WI171220-3	.2		.1873	mg/L	94	90	110			
L41823-01DUP	DUP	12/27/17 18:03			.005	U	mg/L				200	20	RA
L41820-01LFM	LFM	12/27/17 18:10	WI171220-3	.2	18.6	18.14	mg/L	-230	90	110			M3

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438950													
WG438950ICV	ICV	12/27/17 17:57	WI171213-6	.3006		.3125	mg/L	104	90	110			
WG438950ICB	ICB	12/27/17 17:58				U	mg/L		-0.003	0.003			
WG438951													
WG438894LRB	LRB	12/27/17 18:42				U	mg/L		-0.003	0.003			
WG438894LFB	LFB	12/27/17 18:43	WI171213-2	.2004		.2023	mg/L	101	90	110			
L41826-01DUP	DUP	12/27/17 18:45			U	U	mg/L				0	20	RA
L41855-01LFM	LFM	12/27/17 18:47	WI171213-2	.2004	U	.199	mg/L	99	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	3.996		4.03	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.05	0.05			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	1.5		1.49	mg/L	99	90	110			
L41826-01DUP	DUP	12/29/17 0:12			2.01	2.01	mg/L				0	20	
L41828-01AS	AS	12/29/17 0:48	WI171110-4	300	852	1170	mg/L	106	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	1.5		1.49	mg/L	99	90	110			

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ACZ Project ID: ***L41826***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.98	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1		.98	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1	U	1.02	mg/L	102	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1	U	1.06	mg/L	106	85	115	4	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439247													
WG439247ICV	ICV	01/03/18 18:29	II171206-1	2		2.09	mg/L	105	95	105			
WG439247ICB	ICB	01/03/18 18:35				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 18:47				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 18:51	II171220-5	1		1.09	mg/L	109	85	115			
L41819-02LFM	LFM	01/03/18 19:12	II171220-5	1	U	1.09	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 19:15	II171220-5	1	U	1.07	mg/L	107	70	130	2	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.925	mg/L	96	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.06	0.06			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.0011		1.004	mg/L	100	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.0011	.03	1.039	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.0011	.03	1.052	mg/L	102	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.901	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.06	0.06			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.044	0.044			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.0011		1.002	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.0011	.45	1.462	mg/L	101	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.0011	.45	1.428	mg/L	98	70	130	2	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05431	mg/L	109	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0496		.04809	mg/L	97	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0496	.0003	.0503	mg/L	101	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0496	.0003	.05044	mg/L	101	70	130	0	20	

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ACZ Project ID: ***L41826***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05109	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0496		.05013	mg/L	101	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0496	U	.05026	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0496	U	.0505	mg/L	102	70	130	0	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.9572	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.024	0.024			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.001		.9838	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.001	U	.9888	mg/L	99	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.001	U	1	mg/L	100	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.8978	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.024	0.024			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.0176	0.0176			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.001		.9864	mg/L	99	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.001	.075	1.126	mg/L	105	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.001	.075	1.086	mg/L	101	70	130	4	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		97.28	mg/L	97	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	50.05743		45.33	mg/L	91	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	50.05743	2.1	48.31	mg/L	92	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	50.05743	2.1	48.93	mg/L	94	85	115	1	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		99.24	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	50.05743		47.8	mg/L	95	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	50.05743	37.5	88.76	mg/L	102	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	50.05743	37.5	85.7	mg/L	96	70	130	4	20	

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ACZ Project ID: ***L41826***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05122	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.0467	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.0068	.05288	mg/L	92	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.0068	.05329	mg/L	93	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05153	mg/L	103	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05187	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	10.8	10.802	mg/L	4	70	130			M3
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	10.8	10.82	mg/L	40	70	130	0	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438721													
WG438721CCV	CCV	12/21/17 11:12	HG171221-4	10		9.3	ng/L	93	76.5	123.4			
WG438721CCB	CCB	12/21/17 11:17				U	ng/L		-0.5	0.5			
WG438721PQV	PQV	12/21/17 11:21	HG171221-6	.5		.45	ng/L	90	70	130			
WG438721LFB	LFB	12/21/17 11:26	HG171221-5	2		2.07	ng/L	104	71	125			
L41683-01MS	MS	12/21/17 11:36	HG171221-5	2	U	2.02	ng/L	101	71	125			
L41683-01MSD	MSD	12/21/17 11:41	HG171221-5	2	U	2.1	ng/L	105	71	125	4	24	
WG438721CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438721CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L41826***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438726													
WG438726CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438726CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			
WG438726PQV	PQV	12/21/17 12:21	HG171221-6	.5		.5	ng/L	100	70	130			
WG438726LFB	LFB	12/21/17 12:26	HG171221-5	2		2.02	ng/L	101	71	125			
WG438726CCV2	CCV	12/21/17 13:14	HG171221-4	10		11.3	ng/L	113	76.5	123.4			
WG438726CCB2	CCB	12/21/17 13:19				U	ng/L		-0.5	0.5			
L41799-01MS	MS	12/21/17 13:48	HG171221-5	2	1.4	3.68	ng/L	114	71	125			
L41799-01MSD	MSD	12/21/17 13:53	HG171221-5	2	1.4	3.69	ng/L	115	71	125	0	24	
WG438726CCV3	CCV	12/21/17 14:12	HG171221-4	10		10.8	ng/L	108	76.5	123.4			
WG438726CCB3	CCB	12/21/17 14:17				U	ng/L		-0.5	0.5			
WG438726CCV4	CCV	12/21/17 14:29	HG171221-4	10		10.9	ng/L	109	76.5	123.4			
WG438726CCB4	CCB	12/21/17 14:34				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02006		.02015	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0015	0.0015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04748	mg/L	95	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0016	.05092	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0016	.05117	mg/L	99	70	130	0	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02006		.01911	mg/L	95	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0015	0.0015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.0011	0.0011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.0486	mg/L	97	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	U	.0498	mg/L	99	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	U	.0494	mg/L	99	70	130	1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05223	mg/L	104	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0018	0.0018			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.0464	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0017	.04912	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0017	.04856	mg/L	94	70	130	1	20	

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ACZ Project ID: ***L41826***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05196	mg/L	104	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0018	0.0018			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00132	0.00132			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05021	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.435	.4752	mg/L	80	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.435	.4712	mg/L	72	70	130	1	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438875													
WG438875ICV	ICV	12/22/17 20:58	WI171215-1	2.416		2.297	mg/L	95	90	110			
WG438875ICB	ICB	12/22/17 20:59				U	mg/L		-0.02	0.02			
WG438880													
WG438880LFB1	LFB	12/22/17 23:57	WI170705-5	2		1.939	mg/L	97	90	110			
WG438880LFB2	LFB	12/23/17 0:38	WI170705-5	2		1.894	mg/L	95	90	110			
L41818-12AS	AS	12/23/17 1:05	WI170705-5	6	3.47	9.26	mg/L	97	90	110			
L41819-01DUP	DUP	12/23/17 1:08			30.3	30.28	mg/L				0	20	

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439065													
WG439065ICV	ICV	12/29/17 11:02	WI171221-2	11.988		12.632	mg/L	105	90	110			
WG439065ICB	ICB	12/29/17 11:04				U	mg/L		-0.05	0.05			
WG439065LFB1	LFB	12/29/17 11:05	WI171219-5	10		10.368	mg/L	104	90	110			
L41820-01DUP	DUP	12/29/17 11:08			13	13.033	mg/L				0	20	
L41823-01AS	AS	12/29/17 11:11	WI171219-5	10	U	10.756	mg/L	108	90	110			
WG439065LFB2	LFB	12/29/17 13:40	WI171219-5	10		9.969	mg/L	100	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847LCSW1	LCSW	12/22/17 15:11	PCN52664	6		6	units	100	5.9	6.1			
L41831-01DUP	DUP	12/22/17 16:39			2.5	2.5	units				0	20	
WG438847LCSW4	LCSW	12/22/17 18:15	PCN52664	6		6	units	100	5.9	6.1			
WG438847LCSW7	LCSW	12/22/17 21:04	PCN52664	6		6.1	units	102	5.9	6.1			
WG438847LCSW10	LCSW	12/22/17 23:30	PCN52664	6		6.1	units	102	5.9	6.1			
WG438847LCSW13	LCSW	12/23/17 0:55	PCN52664	6		6.1	units	102	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L41826***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438795													
WG438795ICV	ICV	12/21/17 18:30	WI171105-7	.65228		.675	mg/L	103	90	110			
WG438795ICB	ICB	12/21/17 18:32				U	mg/L		-0.02	0.02			
WG438804													
WG438659LRB	LRB	12/22/17 0:09				U	mg/L		-0.02	0.02			
WG438659LFB	LFB	12/22/17 0:10	WI171213-4	.5		.5	mg/L	100	90	110			
L41820-01LFM	LFM	12/22/17 0:14	WI171213-4	.5	.04	.544	mg/L	101	90	110			
L41821-01DUP	DUP	12/22/17 0:17			.03	.035	mg/L				15	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	20		19.64	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	100.0094		96.94	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	100.0094	3.3	102.9	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	100.0094	3.3	104.1	mg/L	101	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	20		19.78	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	100.0094		100.4	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	100.0094	21	127.6	mg/L	107	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	100.0094	21	122.8	mg/L	102	70	130	4	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438427													
WG438427PBW	PBW	12/18/17 13:28				10	mg/L		-20	20			
WG438427LCSW	LCSW	12/18/17 13:29	PCN54730	260		266	mg/L	102	80	120			
L41831-02DUP	DUP	12/18/17 14:52			4370	4340	mg/L				1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438673													
WG438673PBW	PBW	12/20/17 16:00				U	mg/L		-15	15			
WG438673LCSW	LCSW	12/20/17 16:01	PCN54004	160		155	mg/L	97	80	120			
L41862-12DUP	DUP	12/20/17 16:29			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L41826***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.97	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.9868		.96	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.9868	U	1	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.9868	U	1.01	mg/L	102	85	115	1	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.94	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.9868		1.01	mg/L	102	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.9868	U	.8	mg/L	81	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.9868	U	.77	mg/L	78	70	130	4	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.0494	mg/L	99	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04641	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.0001	.05071	mg/L	101	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.0001	.05072	mg/L	101	70	130	0	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05067	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05236	mg/L	105	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0051	.05904	mg/L	108	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0051	.05872	mg/L	107	70	130	1	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02004		.020476	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.01002		.009311	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.01002	U	.008783	mg/L	88	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.01002	U	.008891	mg/L	89	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02004		.02048	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.01002		.009788	mg/L	98	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.01002	.0001	.00953	mg/L	94	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.01002	.0001	.00948	mg/L	94	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		98.52	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	100.0062		97.4	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	100.0062	U	99.93	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	100.0062	U	100.9	mg/L	101	85	115	1	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		97.22	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	100.0062		98.38	mg/L	98	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	100.0062	127	235.3	mg/L	108	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	100.0062	127	227.1	mg/L	100	70	130	4	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.959	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.015	0.015			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.5015		.4912	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.5015	.052	.5454	mg/L	98	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.5015	.052	.5487	mg/L	99	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.9292	mg/L	96	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.015	0.015			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.011	0.011			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.5015		.4915	mg/L	98	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.5015	2.1	2.704	mg/L	120	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.5015	2.1	2.623	mg/L	104	70	130	3	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	50		50.2	mg/L	100	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.3	mg/L	98	90	110			
L41826-01DUP	DUP	12/29/17 0:12			86.4	86.6	mg/L				0	20	
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		29.6	mg/L	99	90	110			
L41828-01AS	AS	01/03/18 9:26	WI171110-4	30030	54200	82100	mg/L	93	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05353	mg/L	107	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04697	mg/L	94	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	U	.04906	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	U	.04925	mg/L	98	70	130	0	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05241	mg/L	105	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05119	mg/L	102	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.0003	.0497	mg/L	99	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.0003	.04992	mg/L	99	70	130	0	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.04945		.05051	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.04945		.04753	mg/L	96	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.04945	U	.04853	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.04945	U	.04882	mg/L	99	70	130	1	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.04945		.0467	mg/L	94	90	110			
WG439078ICB	ICB	12/29/17 13:39				.00016	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.04945		.04815	mg/L	97	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.04945	U	.04792	mg/L	97	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.04945	U	.04984	mg/L	101	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.9775	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.015	0.015			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.003		1.011	mg/L	101	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.003	.009	1.022	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.003	.009	1.032	mg/L	102	85	115	1	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.9712	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.015	0.015			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.011	0.011			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.003		1.027	mg/L	102	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.003	.015	1.006	mg/L	99	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.003	.015	.9988	mg/L	98	70	130	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05248	mg/L	105	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05		.04759	mg/L	95	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05	U	.05018	mg/L	100	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05	U	.05055	mg/L	101	70	130	1	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05078	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05		.05185	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05	.0545	.10894	mg/L	109	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05	.0545	.10974	mg/L	110	70	130	1	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.04991	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0006	0.0006			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04654	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	U	.0496	mg/L	99	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	U	.04969	mg/L	99	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04879	mg/L	98	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0006	0.0006			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00044	0.00044			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.04963	mg/L	99	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0006	.05106	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0006	.05032	mg/L	99	70	130	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438843													
WG438843ICV	ICV	12/22/17 19:15	II171220-1	2		1.905	mg/L	95	95	105			
WG438843ICB	ICB	12/22/17 19:20				U	mg/L		-0.03	0.03			
WG438843LFB	LFB	12/22/17 19:33	II171220-5	.4942		.5	mg/L	101	85	115			
L37475-30AS	AS	12/22/17 20:18	II171220-5	.4942	U	.523	mg/L	106	85	115			
L37475-30ASD	ASD	12/22/17 20:21	II171220-5	.4942	U	.509	mg/L	103	85	115	3	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.976	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.03	0.03			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.022	0.022			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.4942		.525	mg/L	106	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.4942	.08	.621	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.4942	.08	.606	mg/L	106	70	130	2	20	

SPF Water Engineering ACZ Project ID: ***L41826***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L41826-01	WG439078	Copper, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438950	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438951	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG439078	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438804	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438673	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438847	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID: L41826
Date Received: 12/16/2017 10:30
Received By:
Date Printed: 12/18/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Report to Name. Copy of Report to Email. Sample ID Line 1. Relinquished By section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
4661	2.5	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID:	L41826
Date Received:	12/16/2017 10:30
Received By:	
Date Printed:	12/18/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L41826

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jase Thompson	Address: 300 E. Mallard Dr. Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name: Kurt Newbry	E-mail: knewbry@spfwater.com
Company: SPF Water Engineering	Telephone: (208) 520-9173

Invoice to:

Name: Same	Address: same
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** **State** ID **Zip code** 83706 **Time Zone** MTN

***Sampler's Signature:** _____

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF-2017-GW

PO#: Calico Monitoring Well Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2017-GW							
GMW17-33	12/14/17 16:00	GW	9	x							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached for Parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kurt Newbry	12/15/17 13:30	BCK	12/16/17 1030

L41826 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 13, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

cc: Kurt Newbry

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID:
ACZ Project ID: L45855

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 26, 2018. This project has been assigned to ACZ's project number, L45855. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L45855. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 12, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering

August 13, 2018

Project ID:
ACZ Project ID: L45855

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 groundwater samples from SPF Water Engineering on July 26, 2018. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L45855. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further explanation not provided by the Extended Qualifier Report:

1. Tin, dissolved (B1) - Dissolved Tin was flagged with a "B1" in the QC Summary since tin was detected in the ICB over the limit at 0.00046 mg/L. No further action was taken since dissolved tin was not detected in the sample.

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/10/18 10:40	ttg
Cyanide, WAD	SM4500-CN I- distillation								07/27/18 13:52	ttg/wtc
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/31/18 9:03	ttg
Total Hot Plate Digestion	M200.2 ICP-MS								08/02/18 15:14	rap
Total Hot Plate Digestion	M200.2 ICP								08/01/18 12:53	aeh

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	07/30/18 14:31	dcm
Aluminum, total	M200.7 ICP	1	0.09	B		mg/L	0.03	0.2	08/02/18 21:42	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.0939			mg/L	0.0004	0.002	08/09/18 0:31	msh
Antimony, total	M200.8 ICP-MS	1	0.0876			mg/L	0.0004	0.002	08/08/18 7:47	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0871			mg/L	0.0002	0.001	08/09/18 0:31	msh
Arsenic, total	M200.8 ICP-MS	1	0.0881			mg/L	0.0002	0.001	08/08/18 7:47	msh
Barium, dissolved	M200.7 ICP	1	0.035			mg/L	0.003	0.02	07/30/18 14:31	dcm
Barium, total	M200.7 ICP	1	0.038			mg/L	0.003	0.02	08/02/18 21:42	aeh
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/30/18 14:31	dcm
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/02/18 21:42	aeh
Boron, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	07/30/18 14:31	dcm
Boron, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	08/02/18 21:42	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Calcium, dissolved	M200.7 ICP	1	27.8			mg/L	0.1	0.5	07/30/18 14:31	dcm
Calcium, total	M200.7 ICP	1	29.2			mg/L	0.1	0.5	08/02/18 21:42	aeh
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	08/09/18 0:31	msh
Chromium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.002	08/08/18 7:47	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Cobalt, total	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/09/18 0:31	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/08/18 7:47	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/30/18 14:31	dcm
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/02/18 21:42	aeh
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/30/18 14:31	dcm
Iron, total	M200.7 ICP	1	0.34		*	mg/L	0.02	0.05	08/03/18 12:21	aeh
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Lithium, dissolved	M200.7 ICP	1	0.392			mg/L	0.008	0.04	07/30/18 14:31	dcm
Lithium, total	M200.7 ICP	1	0.384			mg/L	0.008	0.04	08/02/18 21:42	aeh
Magnesium, dissolved	M200.7 ICP	1	1.5			mg/L	0.2	1	07/30/18 14:31	dcm
Magnesium, total	M200.7 ICP	1	1.5			mg/L	0.2	1	08/02/18 21:42	aeh
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/09/18 0:31	msh
Manganese, total	M200.8 ICP-MS	1	0.006			mg/L	0.0004	0.002	08/08/18 7:47	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	08/10/18 9:34	mfm
Mercury, total	M1631, Atomic Fluorescence	1	1.7			ng/L	0.2	0.5	08/06/18 11:47	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0287			mg/L	0.0005	0.003	08/09/18 0:31	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0322			mg/L	0.0005	0.003	08/08/18 7:47	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/09/18 0:31	msh
Nickel, total	M200.8 ICP-MS	1	0.0021	B		mg/L	0.0006	0.003	08/08/18 7:47	msh
Potassium, dissolved	M200.7 ICP	1	13.8			mg/L	0.2	1	07/30/18 14:31	dcm

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Potassium, total	M200.7 ICP	1	14.1			mg/L	0.2	1	08/02/18 21:42	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/30/18 14:31	dcm
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/02/18 21:42	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0003	08/09/18 0:31	msh
Selenium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0003	08/08/18 7:47	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Sodium, dissolved	M200.7 ICP	1	197			mg/L	0.2	1	07/30/18 14:31	dcm
Sodium, total	M200.7 ICP	1	203			mg/L	0.2	1	08/02/18 21:42	aeh
Strontium, dissolved	M200.7 ICP	1	1.03			mg/L	0.005	0.03	07/30/18 14:31	dcm
Strontium, total	M200.7 ICP	1	1.02			mg/L	0.005	0.03	08/02/18 21:42	aeh
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/09/18 0:31	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/08/18 7:47	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/31/18 14:11	dcm
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/02/18 21:42	aeh
Uranium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Uranium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.002			mg/L	0.0002	0.001	08/09/18 0:31	msh
Vanadium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0002	0.001	08/08/18 7:47	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/30/18 14:31	dcm
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/02/18 21:42	aeh

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	07/31/18 0:00	emk
Carbonate as CaCO3		1	36.0			mg/L	2	20	07/31/18 0:00	emk
Hydroxide as CaCO3		1	13.7	B		mg/L	2	20	07/31/18 0:00	emk
Total Alkalinity		1	49.7			mg/L	2	20	07/31/18 0:00	emk
Chloride	M300.0 - Ion Chromatography	5	33.2		*	mg/L	2	10	08/07/18 5:51	las
Conductivity @25C	SM2510B	1	1210			umhos/cm	1	10	08/02/18 18:20	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	08/10/18 15:06	wtc
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/28/18 15:31	pjb
Fluoride	M300.0 - Ion Chromatography	5	1.69		*	mg/L	0.25	1.25	08/07/18 5:51	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		76			mg/L	0.2	5	08/13/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B	*	mg/L	0.02	0.1	08/04/18 0:27	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	0.53		*	mg/L	0.05	0.2	08/06/18 15:04	las
pH (lab)	SM4500H+ B									
pH		1	10.3	H		units	0.1	0.1	07/31/18 0:00	emk
pH measured at		1	19.8			C	0.1	0.1	07/31/18 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.02	0.05	07/31/18 22:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	2	768			mg/L	20	40	07/26/18 16:14	nmc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5.0	B	*	mg/L	5	20	07/27/18 14:39	nmc
Sulfate	M300.0 - Ion Chromatography	5	417			mg/L	2	10	08/07/18 5:51	las

SPF Water Engineering
Project ID:
Sample ID: TRIP BLANK

ACZ Sample ID: ***L45855-02***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/10/18 9:48	mfm
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/06/18 11:52	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452883													
WG452883PBW1	PBW	07/31/18 13:50				3.4	mg/L		-20	20			
WG452883LCSW3	LCSW	07/31/18 14:10	WC180725-8	820.0001		831	mg/L	101	90	110			
L45855-01DUP	DUP	07/31/18 15:58			49.7	54.8	mg/L				10	20	
WG452883LCSW6	LCSW	07/31/18 18:05	WC180725-8	820.0001		836	mg/L	102	90	110			
WG452883PBW2	PBW	07/31/18 18:10				2.2	mg/L		-20	20			
WG452883LCSW9	LCSW	07/31/18 21:41	WC180725-8	820.0001		812	mg/L	99	90	110			
WG452883PBW3	PBW	07/31/18 21:46				2.3	mg/L		-20	20			
WG452883LCSW12	LCSW	08/01/18 0:57	WC180725-8	820.0001		816	mg/L	100	90	110			
WG452883PBW4	PBW	08/01/18 1:02				2.5	mg/L		-20	20			
WG452883LCSW15	LCSW	08/01/18 3:44	WC180725-8	820.0001		824	mg/L	100	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.957	mg/L	98	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.09	0.09			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.0019		1.065	mg/L	106	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.0019	.04	1.105	mg/L	106	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.0019	.04	1.09	mg/L	105	85	115	1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.902	mg/L	95	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.09	0.09			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.066	0.066			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1.0019		1.042	mg/L	104	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1.0019	14.7	15.61	mg/L	91	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1.0019	14.7	15.63	mg/L	93	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02		.02061	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.01		.00954	mg/L	95	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.01	.0004	.00911	mg/L	87	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.01	.0004	.00951	mg/L	91	70	130	4	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02		.02011	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.01		.01032	mg/L	103	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.01	.0008	.0101	mg/L	93	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.01	.0008	.00999	mg/L	92	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04809	mg/L	96	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00044	0.00044			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04678	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	.0011	.04904	mg/L	96	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	.0011	.04877	mg/L	95	70	130	1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04752	mg/L	95	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0006	0.0006			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00044	0.00044			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04631	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	.0015	.04958	mg/L	96	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	.0015	.05041	mg/L	98	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.002	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.009	0.009			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5025		.5048	mg/L	100	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5025	.035	.5426	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5025	.035	.5359	mg/L	100	85	115	1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9162	mg/L	96	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.009	0.009			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.0066	0.0066			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5025		.4967	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5025	U	.521	mg/L	104	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5025	U	.528	mg/L	105	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04604	mg/L	92	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05035		.04366	mg/L	87	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05035	U	.048	mg/L	95	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05035	U	.04724	mg/L	94	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04478	mg/L	90	90	110			
WG453420ICB	ICB	08/08/18 6:25				.000052	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05035		.0434	mg/L	86	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05035	.00045	.04638	mg/L	91	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05035	.00045	.04643	mg/L	91	70	130	0	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.99	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.12	0.12			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.9993		.974	mg/L	97	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.9993	U	.974	mg/L	97	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.9993	U	.966	mg/L	97	85	115	1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.942	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.12	0.12			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.088	0.088			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.9993		.987	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.9993	U	.99	mg/L	99	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.9993	U	1	mg/L	100	70	130	1	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.042	mg/L	102	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.03	0.03			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5005		.515	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5005	.24	.741	mg/L	100	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5005	.24	.731	mg/L	98	85	115	1	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		2.048	mg/L	102	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.03	0.03			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.022	0.022			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5005		.514	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5005	.07	.571	mg/L	100	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5005	.07	.587	mg/L	103	70	130	3	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0508	mg/L	102	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.0481	mg/L	96	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	U	.04916	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	U	.04949	mg/L	99	70	130	1	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04945	mg/L	99	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.0472	mg/L	94	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0008	.04891	mg/L	96	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0008	.04948	mg/L	97	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		99.8	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	68.22088		69.5	mg/L	102	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	68.22088	27.8	97.02	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	68.22088	27.8	95.9	mg/L	100	85	115	1	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		97.47	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	68.22088		69.54	mg/L	102	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	68.22088	521	585	mg/L	94	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	68.22088	521	590.5	mg/L	102	70	130	1	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	19.96		19.9	mg/L	100	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.4	0.4			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	30		29.1	mg/L	97	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	30		29.1	mg/L	97	90	110			
L45837-08DUP	DUP	08/07/18 2:16			U	U	mg/L				0	20	RA
L45837-09AS	AS	08/07/18 3:27	WI180430-12	15000	U	14800	mg/L	99	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05172	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.0011	0.0011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04647	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	U	.04726	mg/L	94	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	U	.04685	mg/L	94	70	130	1	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05082	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0015	0.0015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.0011	0.0011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04612	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0115	.05772	mg/L	92	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0115	.05835	mg/L	94	70	130	1	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05199	mg/L	104	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04606	mg/L	92	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.00048	.04641	mg/L	92	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.00048	.04608	mg/L	91	70	130	1	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05097	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04539	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0036	.04897	mg/L	91	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0036	.04967	mg/L	92	70	130	1	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453115													
WG453115LCSW2	LCSW	08/02/18 16:52	PCN55810	1410		1550	umhos/cm	110	90	110			
L45863-01DUP	DUP	08/02/18 19:00			5750	5740	umhos/cm				0	20	
WG453115LCSW5	LCSW	08/02/18 19:05	PCN55810	1410		1510	umhos/cm	107	90	110			
WG453115LCSW8	LCSW	08/02/18 23:18	PCN55810	1410		1470	umhos/cm	104	90	110			
WG453115LCSW11	LCSW	08/03/18 1:38	PCN55810	1410		1460	umhos/cm	104	90	110			
WG453115LCSW14	LCSW	08/03/18 4:43	PCN55810	1410		1440	umhos/cm	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04837	mg/L	97	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0491		.04365	mg/L	89	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0491	.0027	.04662	mg/L	89	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0491	.0027	.04595	mg/L	88	70	130	1	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04662	mg/L	93	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0491		.04377	mg/L	89	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0491	.3172	.357	mg/L	81	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0491	.3172	.3597	mg/L	87	70	130	1	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453783													
WG453783ICV	ICV	08/10/18 14:58	WI180728-2	.3		.2832	mg/L	94	90	110			
WG453783ICB	ICB	08/10/18 14:59				U	mg/L		-0.003	0.003			
WG453737LRB	LRB	08/10/18 15:00				U	mg/L		-0.003	0.003			
L45868-02DUP	DUP	08/10/18 15:08			U	U	mg/L				0	20	RA
WG453737LFB	LFB	08/10/18 15:21	WI180727-11	.2		.1793	mg/L	90	90	110			
WG453783ICV1	ICV	08/10/18 17:07	WI180728-2	.3		.2729	mg/L	91	90	110			
WG453783ICB1	ICB	08/10/18 17:08				U	mg/L		-0.003	0.003			
L45868-03LFM	LFM	08/10/18 17:10	WI180727-11	.2	U	.1716	mg/L	86	90	110			M2

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452722													
WG452722ICV	ICV	07/28/18 15:19	WI180728-2	.3		.2708	mg/L	90	90	110			
WG452722ICB	ICB	07/28/18 15:20				U	mg/L		-0.003	0.003			
WG452666LRB	LRB	07/28/18 15:20				U	mg/L		-0.003	0.003			
WG452666LFB	LFB	07/28/18 15:21	WI180713-3	.2		.1962	mg/L	98	90	110			
L45825-01DUP	DUP	07/28/18 15:23			U	U	mg/L				0	20	RA
L45834-02LFM	LFM	07/28/18 15:25	WI180713-3	.2	.004	.2035	mg/L	100	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	4.012		3.86	mg/L	96	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.05	0.05			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	1.5		1.48	mg/L	99	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	1.5		1.47	mg/L	98	90	110			
L45837-08DUP	DUP	08/07/18 2:16			U	U	mg/L				0	20	RA
L45837-09AS	AS	08/07/18 3:27	WI180430-12	750	71.4	902	mg/L	111	90	110			M1

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.05	mg/L	103	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1		.98	mg/L	98	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1	U	1.02	mg/L	102	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1	U	1	mg/L	100	85	115	2	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		2	mg/L	100	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1		1.01	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1	U	.86	mg/L	86	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1	U	.72	mg/L	72	70	130	18	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.965	mg/L	98	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.06	0.06			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.0018		1.037	mg/L	104	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.0018	U	1.029	mg/L	103	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.0018	U	1.021	mg/L	102	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453161													
WG453161ICV	ICV	08/03/18 11:10	II180718-1	2		1.895	mg/L	95	95	105			
WG453161ICB	ICB	08/03/18 11:16				U	mg/L		-0.06	0.06			
WG452941LRB	LRB	08/03/18 11:29				U	mg/L		-0.044	0.044			
WG452941LFB	LFB	08/03/18 11:32	II180731-2	1.0018		.994	mg/L	99	85	115			
L45863-04LFM	LFM	08/03/18 12:37	II180731-2	1.0018	167	165.5	mg/L	-150	70	130			M3
L45863-04LFMD	LFMD	08/03/18 12:47	II180731-2	1.0018	167	164.7	mg/L	-230	70	130	0	20	M3

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04974	mg/L	99	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0496		.04601	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0496	U	.04793	mg/L	97	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0496	U	.04796	mg/L	97	70	130	0	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04885	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0496		.04552	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0496	.002	.04914	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0496	.002	.04878	mg/L	94	70	130	1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.048	mg/L	102	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.024	0.024			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.003		.988	mg/L	99	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.003	.392	1.375	mg/L	98	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.003	.392	1.361	mg/L	97	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9515	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.024	0.024			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.0176	0.0176			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1.003		.965	mg/L	96	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1.003	.12	1.12	mg/L	100	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1.003	.12	1.122	mg/L	100	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		100.74	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	50.05667		49.89	mg/L	100	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	50.05667	1.5	51.98	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	50.05667	1.5	51.27	mg/L	99	85	115	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		98.28	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	50.05667		49.69	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	50.05667	108	156.9	mg/L	98	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	50.05667	108	158	mg/L	100	70	130	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05217	mg/L	104	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05		.04803	mg/L	96	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05	.0033	.05302	mg/L	99	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05	.0033	.05233	mg/L	98	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05115	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05		.04792	mg/L	96	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05	.5934	.6466	mg/L	106	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05	.5934	.6454	mg/L	104	70	130	0	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451339													
WG451339ICV	ICV	07/10/18 15:34	HG180622-4	10		11.1	ng/L	111	79	121			
WG451339ICB	ICB	07/10/18 15:39				U	ng/L		-0.5	0.5			
WG453728													
WG453728CCV	CCV	08/10/18 9:09	HG180622-4	10		10.3	ng/L	103	76.5	123.4			
WG453728CCB	CCB	08/10/18 9:14				U	ng/L		-0.5	0.5			
WG453728PQV	PQV	08/10/18 9:19	HG180622-6	.5		.54	ng/L	108	70	130			
WG453728LFB	LFB	08/10/18 9:24	HG180622-5	2		1.97	ng/L	99	71	125			
L45855-01MS	MS	08/10/18 9:39	HG180622-5	2	.8	2.74	ng/L	97	71	125			
L45855-01MSD	MSD	08/10/18 9:44	HG180622-5	2	.8	2.69	ng/L	95	71	125	2	24	
WG453728CCV1	CCV	08/10/18 9:53	HG180622-4	10		10.3	ng/L	103	76.5	123.4			
WG453728CCB1	CCB	08/10/18 9:58				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451339													
WG451339ICV	ICV	07/10/18 15:34	HG180622-4	10		11.1	ng/L	111	79	121			
WG451339ICB	ICB	07/10/18 15:39				U	ng/L		-0.5	0.5			
WG453250													
WG453250CCV1	CCV	08/06/18 11:24	HG180622-4	10		10.5	ng/L	105	76.5	123.4			
WG453250CCB1	CCB	08/06/18 11:29				U	ng/L		-0.5	0.5			
WG453250PQV	PQV	08/06/18 11:34	HG180622-6	.5		.47	ng/L	94	70	130			
WG453250LFB	LFB	08/06/18 11:39	HG180622-5	2		1.78	ng/L	89	71	125			
WG453250CCV2	CCV	08/06/18 12:26	HG180622-4	10		10.1	ng/L	101	76.5	123.4			
WG453250CCB2	CCB	08/06/18 12:30				U	ng/L		-0.5	0.5			
L45865-01MS	MS	08/06/18 12:40	HG180622-5	2	1.5	3.41	ng/L	96	71	125			
L45865-01MSD	MSD	08/06/18 12:45	HG180622-5	2	1.5	2.95	ng/L	73	71	125	14	24	
WG453250CCV3	CCV	08/06/18 13:19	HG180622-4	10		9.55	ng/L	96	76.5	123.4			
WG453250CCB3	CCB	08/06/18 13:24				U	ng/L		-0.5	0.5			
WG453250CCV4	CCV	08/06/18 13:58	HG180622-4	10		9.79	ng/L	98	76.5	123.4			
WG453250CCB4	CCB	08/06/18 14:03				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02006		.01967	mg/L	98	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.0011	0.0011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05015		.04482	mg/L	89	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05015	.0048	.05058	mg/L	91	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05015	.0048	.05125	mg/L	93	70	130	1	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02006		.01974	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0015	0.0015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.0011	0.0011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05015		.04567	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05015	.0215	.06912	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05015	.0215	.0696	mg/L	96	70	130	1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05018	mg/L	100	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00132	0.00132			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04561	mg/L	91	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	.0026	.0473	mg/L	89	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	.0026	.04722	mg/L	89	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04997	mg/L	100	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0018	0.0018			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00132	0.00132			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04519	mg/L	90	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	.0107	.05476	mg/L	88	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	.0107	.05599	mg/L	90	70	130	2	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453225													
WG453225ICV	ICV	08/03/18 22:44	WI180602-1	2.416		2.392	mg/L	99	90	110			
WG453225ICB	ICB	08/03/18 22:45				U	mg/L		-0.02	0.02			
WG453228													
WG453228LFB	LFB	08/04/18 0:15	WI180703-7	2		1.904	mg/L	95	90	110			
L45718-01AS	AS	08/04/18 0:18	WI180703-7	2	1.75	3.691	mg/L	97	90	110			
L45718-02DUP	DUP	08/04/18 0:21			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453252													
WG453252ICV	ICV	08/06/18 13:03	WI180626-2	11.988		12.139	mg/L	101	90	110			
WG453252ICB	ICB	08/06/18 13:05				U	mg/L		-0.05	0.05			
WG453275													
WG453275LFB	LFB	08/06/18 14:45	WI171219-5	10		9.968	mg/L	100	90	110			
L45718-01AS	AS	08/06/18 14:48	WI171219-5	10	U	9.92	mg/L	99	90	110			
L45719-02DUP	DUP	08/06/18 14:51			.12	.149	mg/L				22	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452883													
WG452883LCSW1	LCSW	07/31/18 13:56	PCN55475	6.01		6.1	units	101	5.9	6.1			
L45855-01DUP	DUP	07/31/18 15:58			10.3	10.4	units				1	20	
WG452883LCSW4	LCSW	07/31/18 17:51	PCN55475	6.01		6	units	100	5.9	6.1			
WG452883LCSW7	LCSW	07/31/18 21:25	PCN55475	6.01		6.1	units	101	5.9	6.1			
WG452883LCSW10	LCSW	08/01/18 0:42	PCN55475	6.01		6	units	100	5.9	6.1			
WG452883LCSW13	LCSW	08/01/18 3:29	PCN55475	6.01		6.1	units	101	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452913													
WG452913ICV	ICV	07/31/18 21:37	WI180702-6	.65228		.672	mg/L	103	90	110			
WG452913ICB	ICB	07/31/18 21:39				U	mg/L		-0.02	0.02			
WG452914													
WG452841LRB	LRB	07/31/18 22:12				U	mg/L		-0.02	0.02			
WG452841LFB	LFB	07/31/18 22:13	WI180720-8	.5		.491	mg/L	98	90	110			
L45855-01LFM	LFM	07/31/18 22:15	WI180720-8	.5	U	.401	mg/L	80	90	110			M2
L45877-01DUP	DUP	07/31/18 22:18			.02	.027	mg/L				30	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	20		20.22	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	99.72934		102.3	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	99.72934	13.8	117.5	mg/L	104	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	99.72934	13.8	116	mg/L	102	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	20		19.61	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	99.72934		101	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	99.72934	28	129.8	mg/L	102	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	99.72934	28	131.2	mg/L	103	70	130	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452598													
WG452598PBW	PBW	07/26/18 15:27				U	mg/L		-20	20			
WG452598LCSW	LCSW	07/26/18 15:30	PCN56360	260		258	mg/L	99	80	120			
L45863-04DUP	DUP	07/26/18 16:44			4250	4270	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452695													
WG452695PBW	PBW	07/27/18 14:33				U	mg/L		-15	15			
WG452695LCSW	LCSW	07/27/18 14:36	PCN56360	160		156	mg/L	98	80	120			
L45877-01DUP	DUP	07/27/18 15:14			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.9868		1	mg/L	101	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.9868	U	1.03	mg/L	104	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.9868	U	1	mg/L	101	85	115	3	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.96	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.9868		1.02	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.9868	U	1.02	mg/L	103	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.9868	U	1.03	mg/L	104	70	130	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0493	mg/L	99	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04509	mg/L	90	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.0026	.05173	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.0026	.05152	mg/L	98	70	130	0	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04918	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04628	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	U	.04698	mg/L	94	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	U	.0473	mg/L	95	70	130	1	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02004		.02063	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.01002		.009423	mg/L	94	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.01002	U	.008798	mg/L	88	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.01002	U	.008709	mg/L	87	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02004		.02027	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.01002		.009522	mg/L	95	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.01002	U	.009531	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.01002	U	.009572	mg/L	96	70	130	0	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		101.14	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	100.6711		102.9	mg/L	102	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	100.6711	197	291.7	mg/L	94	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	100.6711	197	290.8	mg/L	93	85	115	0	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		99.12	mg/L	99	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	100.6711		103.3	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	100.6711	357	458.7	mg/L	101	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	100.6711	357	460.8	mg/L	103	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.0078	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.015	0.015			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5015		.5166	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5015	1.03	1.512	mg/L	96	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5015	1.03	1.499	mg/L	94	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9332	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.015	0.015			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.011	0.011			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5015		.5077	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5015	1.6	2.096	mg/L	99	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5015	1.6	2.11	mg/L	102	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	50		50.2	mg/L	100	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.4	0.4			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	30		29.4	mg/L	98	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	30		29.3	mg/L	98	90	110			
L45837-08DUP	DUP	08/07/18 2:16			3500	3510	mg/L				0	20	
L45837-09AS	AS	08/07/18 3:27	WI180430-12	15000	34400	48500	mg/L	94	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05101	mg/L	102	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04738	mg/L	95	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	U	.04912	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	U	.04914	mg/L	98	70	130	0	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05091	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04553	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	U	.04682	mg/L	93	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	U	.04648	mg/L	93	70	130	1	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.0501		.04642	mg/L	93	90	110			
WG453574ICB	ICB	08/08/18 23:41				.00046	mg/L		-0.00022	0.00022			B1
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0502		.04398	mg/L	88	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0502	U	.04368	mg/L	87	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0502	U	.04472	mg/L	89	70	130	2	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.0501		.04553	mg/L	91	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0502		.04578	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0502	U	.03436	mg/L	68	70	130			M2
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0502	U	.03434	mg/L	68	70	130	0	20	M2

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452868													
WG452868ICV	ICV	07/31/18 13:25	II180727-1	2		2.0268	mg/L	101	95	105			
WG452868ICB	ICB	07/31/18 13:32				U	mg/L		-0.015	0.015			
WG452868LFB	LFB	07/31/18 13:45	II180726-2	.995		.9954	mg/L	100	85	115			
L45749-04AS	AS	07/31/18 14:01	II180726-2	.995	U	.9845	mg/L	99	85	115			
L45749-04ASD	ASD	07/31/18 14:04	II180726-2	.995	U	1	mg/L	101	85	115	2	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9665	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.015	0.015			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.011	0.011			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.995		.9971	mg/L	100	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.995	U	1.009	mg/L	101	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.995	U	1.024	mg/L	103	70	130	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05065	mg/L	101	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05		.04694	mg/L	94	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05	.0035	.05427	mg/L	102	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05	.0035	.05443	mg/L	102	70	130	0	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05065	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05		.04815	mg/L	96	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05	.0015	.05209	mg/L	101	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05	.0015	.05234	mg/L	102	70	130	0	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0485	mg/L	97	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00044	0.00044			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04554	mg/L	91	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.0008	.04822	mg/L	95	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.0008	.04803	mg/L	94	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04805	mg/L	96	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0006	0.0006			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00044	0.00044			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.046	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0036	.05052	mg/L	94	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0036	.05077	mg/L	94	70	130	0	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.009	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.03	0.03			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.4942		.545	mg/L	110	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.4942	U	.538	mg/L	109	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.4942	U	.528	mg/L	107	85	115	2	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.923	mg/L	96	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.03	0.03			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.022	0.022			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.4942		.538	mg/L	109	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.4942	3.67	4.101	mg/L	87	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.4942	3.67	4.12	mg/L	91	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L45855-01	WG452953	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453783	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452722	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452953	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453161	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG453228	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453275	Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452914	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452695	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453574	Tin, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG453420	Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID: L45855
Date Received: 07/26/2018 11:46
Received By:
Date Printed: 7/27/2018

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Copy of Report to: E-Mail. Sample ID: Matrix section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
5059	5.7	<=6.0	17	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID:	L45855
Date Received:	07/26/2018 11:46
Received By:	
Date Printed:	7/27/2018

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493 L45855

CHAIN of CUSTODY

Report to:

Name: Kurt Newbry	Address: 300 E. Mallard Drive, suite 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: knewbry@spfwater.com	Telephone: (208) 520-9173

Copy of Report to:

Name: Jason Thompson	E-mail: ~~KT~~ JThompson@spfwater.com
Company: SPF	Telephone:

Invoice to:

Name: same	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [/] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [/]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** **State** OR **Zip code** 97913 **Time Zone** MTN

***Sampler's Signature:** [signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #:

PO#:

Reporting state for compliance testing: OR

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	B039852							
GMW 17-32	7/25/18 11:36	GW		✓							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	7/25/18 16:39	[signature]	7.26.18 1146

L45855 Chain of Custod

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order
Bottle List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO39852

Bill to Account: Bill to ACZ
Ship Date Requested: 05/15/2018
Request Placed at: 05/11/2018 12:10
Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	1	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	9	LABELS	Sample Labels	ACZ supplied labels for sample containers
	1	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	5059	Medium	10	1Z8101300317192932

Quote number: SPF-2017-GW
Sample Quantity: 1

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	125 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	250 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

wpl

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 21, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID:
ACZ Project ID: L48680

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 07, 2018. This project has been assigned to ACZ's project number, L48680. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L48680. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 20, 2019. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L48680-01***
Date Sampled: *12/05/18 09:20*
Date Received: *12/07/18*
Sample Matrix: *Groundwater*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/13/18 13:44	ttg
Cyanide, WAD	SM4500-CN I- distillation								12/10/18 12:14	ttg
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/17/18 15:43	ttg
Total Hot Plate Digestion	M200.2 ICP-MS								12/13/18 10:42	rap
Total Hot Plate Digestion	M200.2 ICP								12/14/18 12:24	aeh

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L48680-01***
Date Sampled: *12/05/18 09:20*
Date Received: *12/07/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/19/18 17:48	dcm
Aluminum, total	M200.7 ICP	1	0.07	B		mg/L	0.03	0.2	12/17/18 20:16	dcm
Antimony, dissolved	M200.8 ICP-MS	1	0.0371			mg/L	0.0004	0.002	12/12/18 13:30	bsu
Antimony, total	M200.8 ICP-MS	1	0.0374			mg/L	0.0004	0.002	12/14/18 14:37	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0789			mg/L	0.0002	0.001	12/12/18 13:30	bsu
Arsenic, total	M200.8 ICP-MS	1	0.0799			mg/L	0.0002	0.001	12/14/18 14:37	mfm
Barium, dissolved	M200.7 ICP	1	0.032			mg/L	0.003	0.02	12/19/18 17:48	dcm
Barium, total	M200.7 ICP	1	0.031			mg/L	0.003	0.02	12/17/18 20:16	dcm
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/18 13:30	bsu
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/18 14:37	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/20/18 20:11	aeh
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/17/18 20:16	dcm
Boron, dissolved	M200.7 ICP	1	0.31			mg/L	0.01	0.05	12/20/18 13:08	aeh
Boron, total	M200.7 ICP	1	0.30			mg/L	0.01	0.05	12/17/18 20:16	dcm
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/12/18 13:30	bsu
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/14/18 14:37	mfm
Calcium, dissolved	M200.7 ICP	1	49.8		*	mg/L	0.1	0.5	12/19/18 17:48	dcm
Calcium, total	M200.7 ICP	1	53.6			mg/L	0.1	0.5	12/17/18 20:16	dcm
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/12/18 13:30	bsu
Chromium, total	M200.8 ICP-MS	1	0.0016	B		mg/L	0.0005	0.002	12/14/18 14:37	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	0.00018	B		mg/L	0.00005	0.0003	12/12/18 13:30	bsu
Cobalt, total	M200.8 ICP-MS	1	0.00018	B		mg/L	0.00005	0.0003	12/14/18 14:37	mfm
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0008	0.002	12/12/18 13:30	bsu
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0008	0.002	12/14/18 14:37	mfm
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/18 13:08	aeh
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/17/18 20:16	dcm
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/19/18 17:48	dcm
Iron, total	M200.7 ICP	1	0.52			mg/L	0.02	0.05	12/17/18 20:16	dcm
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/18 13:30	bsu
Lead, total	M200.8 ICP-MS	1	0.0003	B		mg/L	0.0001	0.0005	12/14/18 14:37	mfm
Lithium, dissolved	M200.7 ICP	1	0.420			mg/L	0.008	0.04	12/19/18 17:48	dcm
Lithium, total	M200.7 ICP	1	0.436			mg/L	0.008	0.04	12/17/18 20:16	dcm
Magnesium, dissolved	M200.7 ICP	1	3.1			mg/L	0.2	1	12/19/18 17:48	dcm
Magnesium, total	M200.7 ICP	1	3.2			mg/L	0.2	1	12/17/18 20:16	dcm
Manganese, dissolved	M200.8 ICP-MS	1	0.0057		*	mg/L	0.0004	0.002	12/12/18 13:30	bsu
Manganese, total	M200.8 ICP-MS	1	0.0085			mg/L	0.0004	0.002	12/14/18 14:37	mfm
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/13/18 11:41	mfm
Mercury, total	M1631, Atomic Fluorescence	1	1.5			ng/L	0.2	0.5	12/13/18 13:25	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0175			mg/L	0.0005	0.003	12/12/18 13:30	bsu
Molybdenum, total	M200.8 ICP-MS	1	0.0194			mg/L	0.0005	0.003	12/14/18 14:37	mfm
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	12/12/18 13:30	bsu
Nickel, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	12/14/18 14:37	mfm
Potassium, dissolved	M200.7 ICP	1	10.4			mg/L	0.2	1	12/19/18 17:48	dcm

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L48680-01***
Date Sampled: *12/05/18 09:20*
Date Received: *12/07/18*
Sample Matrix: *Groundwater*

Potassium, total	M200.7 ICP	1	10.8			mg/L	0.2	1	12/17/18 20:16	dcm
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/19/18 17:48	dcm
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/17/18 20:16	dcm
Selenium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/12/18 13:30	bsu
Selenium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0003	12/14/18 14:37	mfm
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/18 13:30	bsu
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/18 14:37	mfm
Sodium, dissolved	M200.7 ICP	1	202		*	mg/L	0.2	1	12/19/18 17:48	dcm
Sodium, total	M200.7 ICP	1	211			mg/L	0.2	1	12/17/18 20:16	dcm
Strontium, dissolved	M200.7 ICP	1	1.39			mg/L	0.005	0.03	12/19/18 17:48	dcm
Strontium, total	M200.7 ICP	1	1.45			mg/L	0.005	0.03	12/17/18 20:16	dcm
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/12/18 13:30	bsu
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/14/18 14:37	mfm
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0008	0.003	12/12/18 13:30	bsu
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0008	0.003	12/14/18 14:37	mfm
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/19/18 17:48	dcm
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	12/17/18 20:16	dcm
Uranium, dissolved	M200.8 ICP-MS	1	0.0013			mg/L	0.0001	0.0005	12/12/18 13:30	bsu
Uranium, total	M200.8 ICP-MS	1	0.0014			mg/L	0.0001	0.0005	12/14/18 14:37	mfm
Vanadium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0005	0.002	12/12/18 13:30	bsu
Vanadium, total	M200.8 ICP-MS	1	0.0005	B		mg/L	0.0005	0.002	12/14/18 14:37	mfm
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/19/18 17:48	dcm
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	12/17/18 20:16	dcm

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L48680-01***
Date Sampled: *12/05/18 09:20*
Date Received: *12/07/18*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	78.7			mg/L	2	20	12/17/18 0:00	enb
Carbonate as CaCO3		1		U		mg/L	2	20	12/17/18 0:00	enb
Hydroxide as CaCO3		1		U		mg/L	2	20	12/17/18 0:00	enb
Total Alkalinity		1	78.7			mg/L	2	20	12/17/18 0:00	enb
Chloride	M300.0 - Ion Chromatography	5	39.6			mg/L	2	10	12/13/18 18:20	mss2
Conductivity @25C	SM2510B	1	1240			umhos/cm	1	10	12/12/18 18:08	kja
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/14/18 14:48	ttg
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/11/18 12:32	mss2
Fluoride	M300.0 - Ion Chromatography	5	1.76		*	mg/L	0.25	1.25	12/13/18 18:20	mss2
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		137			mg/L	0.2	5	12/21/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B		mg/L	0.02	0.1	12/18/18 23:56	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	0.22			mg/L	0.05	0.2	12/14/18 14:02	mss2
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	12/17/18 0:00	enb
pH measured at		1	22.6			C	0.1	0.1	12/17/18 0:00	enb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U		mg/L	0.02	0.05	12/19/18 1:39	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	830			mg/L	10	20	12/07/18 15:57	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5.0	B	*	mg/L	5	20	12/11/18 12:25	kja
Sulfate	M300.0 - Ion Chromatography	10	532			mg/L	4	20	12/14/18 11:18	mss2

SPF Water Engineering
Project ID:
Sample ID: TRIP BLANK

ACZ Sample ID: ***L48680-02***
Date Sampled: *12/05/18 00:00*
Date Received: *12/07/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/13/18 13:39	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462817													
WG462817PBW1	PBW	12/17/18 15:24				11.6	mg/L		-20	20			
WG462817LCSW3	LCSW	12/17/18 15:41	WC181217-8	820.0001		778	mg/L	95	90	110			
L48682-02DUP	DUP	12/17/18 17:23			133	133	mg/L				0	20	
WG462817LCSW6	LCSW	12/17/18 19:39	WC181217-8	820.0001		796	mg/L	97	90	110			
WG462817PBW2	PBW	12/17/18 19:45				U	mg/L		-20	20			
WG462817LCSW9	LCSW	12/17/18 23:38	WC181217-8	820.0001		802	mg/L	98	90	110			
WG462817PBW3	PBW	12/17/18 23:44				2.4	mg/L		-20	20			
WG462817LCSW12	LCSW	12/18/18 3:46	WC181217-8	820.0001		815	mg/L	99	90	110			
WG462817PBW4	PBW	12/18/18 3:54				2	mg/L		-20	20			
WG462817LCSW15	LCSW	12/18/18 7:48	WC181217-8	820.0001		820	mg/L	100	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		1.98	mg/L	99	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.09	0.09			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	1.0006		1.013	mg/L	101	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	1.0006	.14	1.153	mg/L	101	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	1.0006	.14	1.178	mg/L	104	85	115	2	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.958	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.09	0.09			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.066	0.066			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	1.0006		1.01	mg/L	101	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	1.0006	U	1.03	mg/L	103	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	1.0006	U	1.048	mg/L	105	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.02		.01986	mg/L	99	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00088	0.00088			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.01		.00964	mg/L	96	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.01	U	.01035	mg/L	104	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.01	U	.01053	mg/L	105	70	130	2	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.02		.01832	mg/L	92	90	110			
WG462690ICB	ICB	12/14/18 14:25				.00047	mg/L		-0.0012	0.0012			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00088	0.00088			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.01		.0095	mg/L	95	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.01	U	.00991	mg/L	99	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.01	U	.00988	mg/L	99	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05031	mg/L	101	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00044	0.00044			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.0477	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	U	.04694	mg/L	94	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	U	.04643	mg/L	93	70	130	1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04978	mg/L	100	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0006	0.0006			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00044	0.00044			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.04626	mg/L	92	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	.0004	.04811	mg/L	95	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	.0004	.04815	mg/L	95	70	130	0	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		2.03	mg/L	102	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.009	0.009			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	.5025		.4885	mg/L	97	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	.5025	.013	.5039	mg/L	98	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	.5025	.013	.5004	mg/L	97	85	115	1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.9695	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.009	0.009			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.0066	0.0066			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.5025		.5009	mg/L	100	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.5025	.007	.5126	mg/L	101	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.5025	.007	.5093	mg/L	100	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.046814	mg/L	94	90	110			
WG462418ICB	ICB	12/12/18 13:25				.000067	mg/L		-0.00011	0.00011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.044502	mg/L	89	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	U	.043609	mg/L	87	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	U	.044196	mg/L	88	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.051173	mg/L	102	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.00015	0.00015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00011	0.00011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.048625	mg/L	97	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	U	.049148	mg/L	98	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	U	.049156	mg/L	98	70	130	0	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG463215													
WG463215ICV	ICV	12/20/18 19:49	II181217-1	2		2.004	mg/L	100	95	105			
WG463215ICB	ICB	12/20/18 19:55				U	mg/L		-0.12	0.12			
WG463215LFB	LFB	12/20/18 20:08	II181219-2	.9993		1.023	mg/L	102	85	115			
L48839-03AS	AS	12/20/18 20:31	II181219-2	.9993	U	1.037	mg/L	104	85	115			
L48839-03ASD	ASD	12/20/18 20:35	II181219-2	.9993	U	1.027	mg/L	103	85	115	1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		2.001	mg/L	100	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.12	0.12			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.088	0.088			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.9993		1.02	mg/L	102	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.9993	U	1.013	mg/L	101	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.9993	U	1.014	mg/L	101	70	130	0	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG463161													
WG463161ICV	ICV	12/20/18 12:45	II181217-1	2		2.058	mg/L	103	95	105			
WG463161ICB	ICB	12/20/18 12:51				.018	mg/L		-0.03	0.03			
WG463161LFB	LFB	12/20/18 13:05	II181219-2	.5005		.516	mg/L	103	85	115			
L48775-06AS	AS	12/20/18 13:31	II181219-2	.5005	U	.571	mg/L	114	85	115			
L48775-06ASD	ASD	12/20/18 13:34	II181219-2	.5005	U	.569	mg/L	114	85	115	0	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		2.038	mg/L	102	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.03	0.03			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.022	0.022			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.5005		.505	mg/L	101	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.5005	3.68	4.176	mg/L	99	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.5005	3.68	4.166	mg/L	97	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.049083	mg/L	98	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00011	0.00011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.046343	mg/L	93	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	.00007	.047394	mg/L	95	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	.00007	.045752	mg/L	91	70	130	4	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.051399	mg/L	103	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.00015	0.00015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00011	0.00011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.047891	mg/L	96	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	U	.049423	mg/L	99	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	U	.04946	mg/L	99	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	100		96.83	mg/L	97	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.3	0.3			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	68.44277		66.92	mg/L	98	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	68.44277	575	617.1	mg/L	62	85	115			M3
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	68.44277	575	617.5	mg/L	62	85	115	0	20	M3

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	100		95.97	mg/L	96	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.3	0.3			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.22	0.22			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	68.44277		69.6	mg/L	102	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	68.44277	133	202.1	mg/L	101	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	68.44277	133	202	mg/L	101	70	130	0	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG460657													
WG460657ICV	ICV	11/07/18 17:50	WI181011-1	19.96		19.7	mg/L	99	90	110			
WG460657ICB	ICB	11/07/18 18:08				U	mg/L		-0.4	0.4			
WG462587													
WG462587LFB1	LFB	12/13/18 18:02	WI181011-3	30		31.1	mg/L	104	90	110			
L48680-01DUP	DUP	12/13/18 18:37			39.6	39.6	mg/L				0	20	
L48682-01AS	AS	12/13/18 19:13	WI181011-3	30	4.8	36.6	mg/L	106	90	110			
WG462587LFB2	LFB	12/14/18 2:41	WI181011-3	30		31.2	mg/L	104	90	110			

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05161	mg/L	103	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.0011	0.0011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.04755	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	U	.04255	mg/L	85	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	U	.04288	mg/L	86	70	130	1	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.05204	mg/L	104	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0015	0.0015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.0011	0.0011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.04623	mg/L	92	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	U	.04765	mg/L	95	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	U	.04691	mg/L	94	70	130	2	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.051229	mg/L	102	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00011	0.00011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.04859	mg/L	97	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	.0034	.05393	mg/L	101	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	.0034	.050365	mg/L	94	70	130	7	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.050085	mg/L	100	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.00015	0.00015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00011	0.00011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.046224	mg/L	92	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	.00012	.046343	mg/L	92	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	.00012	.04664	mg/L	93	70	130	1	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462492													
WG462492LCSW2	LCSW	12/12/18 16:47	PCN57191	1410		1440	umhos/cm	102	90	110			
L48682-01DUP	DUP	12/12/18 18:24			113	111	umhos/cm				2	20	
WG462492LCSW5	LCSW	12/12/18 19:55	PCN57191	1410		1440	umhos/cm	102	90	110			
WG462492LCSW8	LCSW	12/12/18 22:53	PCN57191	1410		1430	umhos/cm	101	90	110			
WG462492LCSW11	LCSW	12/13/18 1:58	PCN57191	1410		1430	umhos/cm	101	90	110			
WG462492LCSW14	LCSW	12/13/18 5:19	PCN57191	1410		1420	umhos/cm	101	90	110			

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05052	mg/L	101	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00176	0.00176			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.0501		.04736	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.0501	U	.0387	mg/L	77	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.0501	U	.03832	mg/L	76	70	130	1	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.05261	mg/L	105	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0024	0.0024			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00176	0.00176			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.0501		.0483	mg/L	96	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.0501	.001	.04822	mg/L	94	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.0501	.001	.04771	mg/L	93	70	130	1	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462678													
WG462678ICV	ICV	12/14/18 13:26	WI181211-5	.3		.3025	mg/L	101	90	110			
WG462678ICB	ICB	12/14/18 13:27				U	mg/L		-0.003	0.003			
WG462680													
WG462557LRB	LRB	12/14/18 14:44				U	mg/L		-0.003	0.003			
WG462557LFB	LFB	12/14/18 14:45	WI181211-3	.2		.1955	mg/L	98	90	110			
L48647-01DUP	DUP	12/14/18 14:47			U	U	mg/L				0	20	RA
L48680-01LFM	LFM	12/14/18 14:48	WI181211-3	.2	U	.198	mg/L	99	90	110			

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462320													
WG462320ICV	ICV	12/11/18 11:43	WI181211-5	.3		.2939	mg/L	98	90	110			
WG462320ICB	ICB	12/11/18 11:44				U	mg/L		-0.003	0.003			
WG462330													
WG462198LRB	LRB	12/11/18 12:19				U	mg/L		-0.003	0.003			
L43416-37DUP	DUP	12/11/18 12:22			U	U	mg/L				0	20	RA
L43417-37LFM	LFM	12/11/18 12:23	WI181126-4	.2	U	.1823	mg/L	91	90	110			
WG462198LFB	LFB	12/11/18 12:39	WI181126-4	.2		.1832	mg/L	92	90	110			

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG460657													
WG460657ICV	ICV	11/07/18 17:50	WI181011-1	4.012		4.03	mg/L	100	90	110			
WG460657ICB	ICB	11/07/18 18:08				U	mg/L		-0.05	0.05			
WG462587													
WG462587LFB1	LFB	12/13/18 18:02	WI181011-3	1.5		1.58	mg/L	105	90	110			
L48680-01DUP	DUP	12/13/18 18:37			1.76	1.75	mg/L				1	20	RA
L48682-01AS	AS	12/13/18 19:13	WI181011-3	1.5	U	1.65	mg/L	110	90	110			
WG462587LFB2	LFB	12/14/18 2:41	WI181011-3	1.5		1.56	mg/L	104	90	110			

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG463161													
WG463161ICV	ICV	12/20/18 12:45	II181217-1	2		1.96	mg/L	98	95	105			
WG463161ICB	ICB	12/20/18 12:51				U	mg/L		-0.3	0.3			
WG463161LFB	LFB	12/20/18 13:05	II181219-2	1		1.03	mg/L	103	85	115			
L48775-06AS	AS	12/20/18 13:31	II181219-2	1	U	1.16	mg/L	116	85	115			MA
L48775-06ASD	ASD	12/20/18 13:34	II181219-2	1	U	1.06	mg/L	106	85	115	9	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		2	mg/L	100	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.3	0.3			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.22	0.22			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	1		1.03	mg/L	103	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	1	U	1.04	mg/L	104	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	1	U	1.07	mg/L	107	70	130	3	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		1.971	mg/L	99	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.06	0.06			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	1.0018		.99	mg/L	99	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	1.0018	.06	1.027	mg/L	97	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	1.0018	.06	1.02	mg/L	96	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.913	mg/L	96	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.06	0.06			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.044	0.044			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	1.0018		1.035	mg/L	103	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	1.0018	.06	1.095	mg/L	103	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	1.0018	.06	1.088	mg/L	103	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.04917	mg/L	98	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00022	0.00022			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.0496		.04689	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.0496	.0002	.05136	mg/L	103	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.0496	.0002	.04922	mg/L	99	70	130	4	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04945	mg/L	99	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0003	0.0003			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00022	0.00022			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.0496		.04621	mg/L	93	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.0496	U	.0482	mg/L	97	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.0496	U	.04805	mg/L	97	70	130	0	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		1.9472	mg/L	97	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.024	0.024			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	1.003		.9545	mg/L	95	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	1.003	.282	1.261	mg/L	98	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	1.003	.282	1.242	mg/L	96	85	115	2	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.9695	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.024	0.024			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.0176	0.0176			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	1.003		1.003	mg/L	100	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	1.003	.071	1.088	mg/L	101	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	1.003	.071	1.088	mg/L	101	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	100		97.75	mg/L	98	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.6	0.6			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	51.06117		50.07	mg/L	98	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	51.06117	10.6	59.2	mg/L	95	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	51.06117	10.6	60.75	mg/L	98	85	115	3	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	100		96.37	mg/L	96	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.6	0.6			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.44	0.44			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	51.06117		51.52	mg/L	101	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	51.06117	27.3	79.43	mg/L	102	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	51.06117	27.3	79.46	mg/L	102	70	130	0	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05018	mg/L	100	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00088	0.00088			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05		.04783	mg/L	96	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05	17.9	18.28834	mg/L	777	70	130			M3
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05	17.9	17.76035	mg/L	-279	70	130	3	20	M3

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04888	mg/L	98	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0012	0.0012			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00088	0.00088			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05		.04518	mg/L	90	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05	.0321	.07665	mg/L	89	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05	.0321	.07775	mg/L	91	70	130	1	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462199													
WG462199ICV	ICV	12/10/18 10:33	HG181210-7	10		10.1	ng/L	101	79	121			
WG462199ICB	ICB	12/10/18 10:38				U	ng/L		-0.5	0.5			
WG462519													
WG462519CCV1	CCV	12/13/18 9:18	HG181210-7	10		11.1	ng/L	111	76.5	123.4			
WG462519CCB1	CCB	12/13/18 9:23				U	ng/L		-0.5	0.5			
WG462519PQV	PQV	12/13/18 9:27	HG181210-9	.5		.39	ng/L	78	70	130			
WG462519LFB	LFB	12/13/18 9:32	HG181210-8	2		2.18	ng/L	109	71	125			
WG462281PBW	PBW	12/13/18 9:40				U	ng/L		-0.5	0.5			
WG462519CCV2	CCV	12/13/18 10:19	HG181210-7	10		9.74	ng/L	97	76.5	123.4			
WG462519CCB2	CCB	12/13/18 10:24				U	ng/L		-0.5	0.5			
WG462519CCV3	CCV	12/13/18 11:17	HG181210-7	10		10.3	ng/L	103	76.5	123.4			
WG462519CCB3	CCB	12/13/18 11:22				U	ng/L		-0.5	0.5			
L48680-01MS	MS	12/13/18 11:48	HG181210-8	2	U	2.46	ng/L	123	71	125			
L48680-01MSD	MSD	12/13/18 11:53	HG181210-8	2	U	2.18	ng/L	109	71	125	12	24	
WG462519CCV4	CCV	12/13/18 11:58	HG181210-7	10		10.2	ng/L	102	76.5	123.4			
WG462519CCB4	CCB	12/13/18 12:03				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462199													
WG462199ICV	ICV	12/10/18 10:33	HG181210-7	10		10.1	ng/L	101	79	121			
WG462199ICB	ICB	12/10/18 10:38				U	ng/L		-0.5	0.5			
WG462540													
WG462540CCV1	CCV	12/13/18 11:58	HG181210-7	10		10.2	ng/L	102	76.5	123.4			
WG462540CCB1	CCB	12/13/18 12:03				U	ng/L		-0.5	0.5			
WG462540PQV	PQV	12/13/18 12:07	HG181210-9	.5		.53	ng/L	106	70	130			
WG462540LFB	LFB	12/13/18 12:12	HG181210-8	2		2.12	ng/L	106	71	125			
WG462540CCV2	CCV	12/13/18 12:56	HG181210-7	10		10.3	ng/L	103	76.5	123.4			
WG462540CCB2	CCB	12/13/18 13:01				U	ng/L		-0.5	0.5			
L48680-01MS	MS	12/13/18 13:30	HG181210-8	2	1.5	3.2	ng/L	85	71	125			
L48680-01MSD	MSD	12/13/18 13:35	HG181210-8	2	1.5	3.54	ng/L	102	71	125	10	24	
WG462540CCV3	CCV	12/13/18 13:54	HG181210-7	10		10.2	ng/L	102	76.5	123.4			
WG462540CCB3	CCB	12/13/18 13:59				U	ng/L		-0.5	0.5			
WG462540CCV4	CCV	12/13/18 14:08	HG181210-7	10		9.85	ng/L	99	76.5	123.4			
WG462540CCB4	CCB	12/13/18 14:13				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.02006		.01937	mg/L	97	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.0011	0.0011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.0501		.04644	mg/L	93	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.0501	.248	.30414	mg/L	112	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.0501	.248	.29734	mg/L	98	70	130	2	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.02006		.01939	mg/L	97	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0015	0.0015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.0011	0.0011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.0501		.04543	mg/L	91	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.0501	.0009	.04923	mg/L	96	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.0501	.0009	.0491	mg/L	96	70	130	0	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05155	mg/L	103	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00132	0.00132			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.0501		.04748	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.0501	.0016	.04068	mg/L	78	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.0501	.0016	.04127	mg/L	79	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.05109	mg/L	102	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0018	0.0018			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00132	0.00132			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.0501		.04615	mg/L	92	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.0501	U	.04585	mg/L	92	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.0501	U	.04584	mg/L	91	70	130	0	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462977													
WG462977ICV	ICV	12/18/18 22:34	WI181206-5	2.416		2.432	mg/L	101	90	110			
WG462977ICB	ICB	12/18/18 22:35				U	mg/L		-0.02	0.02			
WG462979													
WG462979LFB1	LFB	12/18/18 23:36	WI181204-13	2		1.924	mg/L	96	90	110			
L48539-03AS	AS	12/18/18 23:39	WI181204-13	2	1.51	3.501	mg/L	100	90	110			
L48677-01DUP	DUP	12/18/18 23:41			.34	.341	mg/L				0	20	
WG462979LFB2	LFB	12/19/18 0:17	WI181204-13	2		1.984	mg/L	99	90	110			

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462655													
WG462655ICV	ICV	12/14/18 11:41	WI181105-2	11.988		12.034	mg/L	100	90	110			
WG462655ICB	ICB	12/14/18 11:43				U	mg/L		-0.05	0.05			
WG462685													
WG462685LFB	LFB	12/14/18 13:54	WI180918-3	10		9.514	mg/L	95	90	110			
L48673-01AS	AS	12/14/18 13:59	WI180918-3	10	U	9.198	mg/L	92	90	110			
L48672-01DUP	DUP	12/14/18 14:37			40.8	40.76	mg/L				0	20	

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462817													
WG462817LCSW1	LCSW	12/17/18 15:27	PCN55475	6.01		6	units	100	5.9	6.1			
L48682-02DUP	DUP	12/17/18 17:23			7.7	7.7	units				0	20	
WG462817LCSW4	LCSW	12/17/18 19:24	PCN55475	6.01		6	units	100	5.9	6.1			
WG462817LCSW7	LCSW	12/17/18 23:23	PCN55475	6.01		6	units	100	5.9	6.1			
WG462817LCSW10	LCSW	12/18/18 3:34	PCN55475	6.01		6	units	100	5.9	6.1			
WG462817LCSW13	LCSW	12/18/18 7:34	PCN55475	6.01		6	units	100	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462980													
WG462980ICV	ICV	12/19/18 0:45	WI181115-9	.65228		.661	mg/L	101	90	110			
WG462980ICB	ICB	12/19/18 0:47				U	mg/L		-0.02	0.02			
WG462981													
WG462818LRB	LRB	12/19/18 1:30				U	mg/L		-0.02	0.02			
WG462818LFB	LFB	12/19/18 1:31	WI181214-13	.5		.516	mg/L	103	90	110			
L48671-01LFM	LFM	12/19/18 1:33	10XPHOS	5	4.6	9.64	mg/L	101	90	110			
L48672-01DUP	DUP	12/19/18 1:36			6.5	6.56	mg/L				1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	20		19.63	mg/L	98	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.6	0.6			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	101.8983		98.88	mg/L	97	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	101.8983	235	330.2	mg/L	93	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	101.8983	235	330	mg/L	93	85	115	0	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	20		19.71	mg/L	99	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.6	0.6			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.44	0.44			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	101.8983		104.1	mg/L	102	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	101.8983	85	191	mg/L	104	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	101.8983	85	190.2	mg/L	103	70	130	0	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462136													
WG462136PBW	PBW	12/07/18 15:01				U	mg/L		-20	20			
WG462136LCSW	LCSW	12/07/18 15:03	PCN56994	260		260	mg/L	100	80	120			
L48680-01DUP	DUP	12/07/18 16:00			830	828	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462329													
WG462329PBW	PBW	12/11/18 12:15				U	mg/L		-15	15			
WG462329LCSW	LCSW	12/11/18 12:16	PCN56953	160		150	mg/L	94	80	120			
L48688-02DUP	DUP	12/11/18 12:30			5	U	mg/L				200	10	RA

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		2	mg/L	100	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.3	0.3			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	.9868		1.01	mg/L	102	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	.9868	U	1.01	mg/L	102	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	.9868	U	1	mg/L	101	85	115	1	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.96	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.3	0.3			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.22	0.22			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.9868		1.03	mg/L	104	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.9868	U	1.03	mg/L	104	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.9868	U	1.03	mg/L	104	70	130	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05102	mg/L	102	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00022	0.00022			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.04844	mg/L	97	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	.0029	.05234	mg/L	99	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	.0029	.05396	mg/L	102	70	130	3	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04907	mg/L	98	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0003	0.0003			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00022	0.00022			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.04841	mg/L	97	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	.0002	.04777	mg/L	95	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	.0002	.04899	mg/L	97	70	130	3	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.02004		.01987	mg/L	99	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00022	0.00022			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.01002		.00926	mg/L	92	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.01002	U	.00904	mg/L	90	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.01002	U	.00892	mg/L	89	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.02004		.02101	mg/L	105	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0003	0.0003			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00022	0.00022			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.01002		.00979	mg/L	98	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.01002	U	.00975	mg/L	97	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.01002	U	.00984	mg/L	98	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	100		98	mg/L	98	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.6	0.6			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	100.3634		98.22	mg/L	98	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	100.3634	524	592.5	mg/L	68	85	115			M3
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	100.3634	524	601.1	mg/L	77	85	115	1	20	M3

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	100		98.1	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.6	0.6			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.44	0.44			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	100.3634		101	mg/L	101	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	100.3634	754	860.2	mg/L	106	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	100.3634	754	860.3	mg/L	106	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		1.9832	mg/L	99	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.015	0.015			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	.5005		.4959	mg/L	99	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	.5005	1.69	2.126	mg/L	87	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	.5005	1.69	2.131	mg/L	88	85	115	0	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.9458	mg/L	97	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.015	0.015			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.011	0.011			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.5005		.5008	mg/L	100	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.5005	1.32	1.825	mg/L	101	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.5005	1.32	1.828	mg/L	101	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG460657													
WG460657ICV	ICV	11/07/18 17:50	WI181011-1	50		50.4	mg/L	101	90	110			
WG460657ICB	ICB	11/07/18 18:08				U	mg/L		-0.4	0.4			
WG462587													
WG462587LFB1	LFB	12/13/18 18:02	WI181011-3	30		31.6	mg/L	105	90	110			
L48682-01AS	AS	12/13/18 19:13	WI181011-3	30	9.69	40.7	mg/L	103	90	110			
WG462587LFB2	LFB	12/14/18 2:41	WI181011-3	30		31.3	mg/L	104	90	110			
L48680-01DUP	DUP	12/14/18 11:36			532	534	mg/L				0	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05145	mg/L	103	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00022	0.00022			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.0501		.04778	mg/L	95	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.0501	U	.05179	mg/L	103	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.0501	U	.04978	mg/L	99	70	130	4	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04977	mg/L	100	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0003	0.0003			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00022	0.00022			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.0501		.04528	mg/L	90	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.0501	U	.04664	mg/L	93	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.0501	U	.04716	mg/L	94	70	130	1	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.0501		.05007	mg/L	100	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00176	0.00176			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.05049	mg/L	101	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	U	.05097	mg/L	102	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	U	.04958	mg/L	99	70	130	3	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.0501		.04877	mg/L	97	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0024	0.0024			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00176	0.00176			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.04786	mg/L	96	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	U	.04951	mg/L	99	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	U	.04968	mg/L	99	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		2.0178	mg/L	101	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.015	0.015			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	.995		.9985	mg/L	100	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	.995	U	.9986	mg/L	100	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	.995	U	.9967	mg/L	100	85	115	0	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.9618	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.015	0.015			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.011	0.011			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.995		1.04	mg/L	105	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.995	U	1.048	mg/L	105	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.995	U	1.047	mg/L	105	70	130	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05108	mg/L	102	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.00022	0.00022			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05		.04915	mg/L	98	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05	.0024	.05943	mg/L	114	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05	.0024	.05688	mg/L	109	70	130	4	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04821	mg/L	96	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0003	0.0003			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.00022	0.00022			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05		.04499	mg/L	90	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05	.0015	.0495	mg/L	96	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05	.0015	.04995	mg/L	97	70	130	1	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462418													
WG462418ICV	ICV	12/12/18 13:23	MS181210-2	.05		.05027	mg/L	101	90	110			
WG462418ICB	ICB	12/12/18 13:25				U	mg/L		-0.0011	0.0011			
WG462418LFB	LFB	12/12/18 13:27	MS181208-2	.05005		.04784	mg/L	96	85	115			
L48677-02AS	AS	12/12/18 14:05	MS181208-2	.05005	U	.04576	mg/L	91	70	130			
L48677-02ASD	ASD	12/12/18 14:06	MS181208-2	.05005	U	.04571	mg/L	91	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462690													
WG462690ICV	ICV	12/14/18 14:23	MS181210-2	.05		.04907	mg/L	98	90	110			
WG462690ICB	ICB	12/14/18 14:25				U	mg/L		-0.0015	0.0015			
WG462524LRB	LRB	12/14/18 14:26				U	mg/L		-0.0011	0.0011			
WG462524LFB	LFB	12/14/18 14:28	MS181208-2	.05005		.04564	mg/L	91	85	115			
L48721-04LFM	LFM	12/14/18 14:49	MS181208-2	.05005	U	.04842	mg/L	97	70	130			
L48721-04LFMD	LFMD	12/14/18 14:51	MS181208-2	.05005	U	.0482	mg/L	96	70	130	0	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462891													
WG462891ICV	ICV	12/19/18 16:00	II181211-1	2		1.962	mg/L	98	95	105			
WG462891ICB	ICB	12/19/18 16:06				U	mg/L		-0.03	0.03			
WG462891LFB	LFB	12/19/18 16:19	II181213-3	.4942		.517	mg/L	105	85	115			
L48678-08AS	AS	12/19/18 17:39	II181213-3	.4942	.13	.641	mg/L	103	85	115			
L48678-08ASD	ASD	12/19/18 17:42	II181213-3	.4942	.13	.648	mg/L	105	85	115	1	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG462805													
WG462805ICV	ICV	12/17/18 19:11	II181211-1	2		1.952	mg/L	98	95	105			
WG462805ICB	ICB	12/17/18 19:17				U	mg/L		-0.03	0.03			
WG462636LRB	LRB	12/17/18 19:30				U	mg/L		-0.022	0.022			
WG462636LFB	LFB	12/17/18 19:34	II181204-2	.4942		.536	mg/L	108	85	115			
L48647-02LFM	LFM	12/17/18 19:53	II181204-2	.4942	U	.552	mg/L	112	70	130			
L48647-02LFMD	LFMD	12/17/18 19:56	II181204-2	.4942	U	.555	mg/L	112	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L48680***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L48680-01	WG462891	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG462680	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG462330	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG462587	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG463161	Gallium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG462418	Manganese, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG462329	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG462891	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG462418	Vanadium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID: L48680
Date Received: 12/07/2018 11:55
Received By:
Date Printed: 12/7/2018

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Remarks section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA29639	4.1	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID:	L48680
Date Received:	12/07/2018 11:55
Received By:	
Date Printed:	12/7/2018

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L48680

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E Mallard Dr, Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: Jason Thompson	Address: 300 E Mallard Dr, Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: (208) 383-4140

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes ☐ No ☒

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Sean Albertson **Sampler's Site Information** **State** Idaho **Zip code** 83706 **Time Zone** Mtn.

***Sampler's Signature:** Sean Albert

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF-2017-GW

PO#:

Reporting state for compliance testing:

Check box if samples include NRC licensed material? ☐

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* see included								
GMWi7-32	12/5/18 9:20	GW	9									

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* Please see included list for * analyses requested.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Sean Albert	12/5/18 12:25		12/7/18 1155

L48680 Chain of Custod

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Bottle List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO41097

Bill to Account: Bill to ACZ
Ship Date Requested: 11/16/2018
Request Placed at: 11/15/2018 12:54
Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	1	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	9	LABELS	Sample Labels	ACZ supplied labels for sample containers
	1	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	4776	Large	12	1Z8101300317222319

Quote number: SPF-2017-GW
Sample Quantity: 1

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	125 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	250 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

mjj

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

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Lead, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lead, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Lithium, dissolved	M200.7 ICP	0.008 mg/L	$0.00
Lithium, total	M200.7 ICP	0.008 mg/L	$0.00
Magnesium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Magnesium, total	M200.7 ICP	0.2 mg/L	$0.00
Manganese, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Manganese, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Mercury, dissolved	M1631, Atomic Fluorescence	0.2 ng/L	$50.00
Mercury, total	M1631, Atomic Fluorescence	0.2 ng/L	$50.00
Molybdenum, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Molybdenum, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Nickel, dissolved	M200.8 ICP-MS	0.0006 mg/L	$0.00
Nickel, total	M200.8 ICP-MS	0.0006 mg/L	$0.00
Potassium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Potassium, total	M200.7 ICP	0.2 mg/L	$0.00
Scandium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Scandium, total	M200.7 ICP	0.1 mg/L	$0.00
Selenium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Selenium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Silver, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Silver, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Sodium, dissolved	M200.7 ICP	0.2 mg/L	$0.00
Sodium, total	M200.7 ICP	0.2 mg/L	$0.00
Strontium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Strontium, total	M200.7 ICP	0.005 mg/L	$0.00
Thallium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Thallium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Tin, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Titanium, dissolved	M200.7 ICP	0.005 mg/L	$0.00
Titanium, total	M200.7 ICP	0.005 mg/L	$0.00
Uranium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$17.00
Uranium, total	M200.8 ICP-MS	0.0001 mg/L	$17.00
Vanadium, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Vanadium, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Zinc, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Zinc, total	M200.7 ICP	0.01 mg/L	$0.00
Misc.			
Electronic Data Deliverable			$0.00
Quality Control Summary			$0.00
Setup charge for ICP, dissolved			$90.00

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S/ mj D/ ## P/

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Quote Number: SPF-2017-GW

CONTRACT DETAILS

Pricing includes shipment of all standard sample containers and related paperwork by UPS Ground Service. Please allow three to five days for delivery when ordering containers. ACZ must be notified prior to receiving samples of all special requests such as electronic data deliverables or special reporting reqirements. The client will be charged for special sample containers or express shipping and additional charges may apply for non-standard requests.

This quotation is valid for six months from the bid date unless specified otherwise in the bid. All bids must be signed and returned to ACZ before the project(s) is received. The authorized signature represents acceptance of the pricing as well as the general terms and conditions of ACZ Laboratories, Inc. which may be downloaded from our web site at http://www.acz.com/PDF/termsconditions.pdf. Please note that MDL's in this quote may possibly increase due to sample matrix or samples with high TDS.

All orders that require shipping of coolers are subject to a minimum charge of $200.00. Local orders without shipping are subject to a minimum charge of $125.00. Samples may incur a $11.00/sample disposal fee for any samples deemed to be hazardous.

ACZ Representative (Authorized signature and date) _____

Client Representative (Authorized signature and date) _____

Appendix I
QA/QC Summary Tables

Q1-2013			59772				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	0.04	<0.03	0.040	0.021	0.02	61%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.0008	0.0008	0.00080	0.00080	0.0000	0%	
Antimony, total	mg/L	0.0004	0.0007	0.0007	0.00070	0.00070	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.0410	0.0398	0.04100	0.03980	0.0012	3%	
Arsenic, total	mg/L	0.0002	0.0366	0.0374	0.03660	0.03740	0.0008	2%	
Barium, dissolved	mg/L	0.003	0.030	0.030	0.0300	0.0300	0.000	0%	
Barium, total	mg/L	0.003	0.026	0.026	0.0260	0.0260	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.07	0.07	0.072	0.072	0.00	0%	
Boron, total	mg/L	0.01	0.08	0.08	0.080	0.080	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	40.3	40.1	40.30	40.10	0.2	0%	
Calcium, total	mg/L	0.2	39.9	39.7	39.90	39.70	0.2	1%	
Chromium, dissolved	mg/L	0.0005	0.0008	0.0008	0.00080	0.00080	0.0000	0%	
Chromium, total	mg/L	0.0005	0.0009	0.0008	0.00090	0.00080	0.0001	12%	
Cobalt, dissolved	mg/L	0.00005	0.00028	0.00039	0.000280	0.000390	0.00011	33%	(4)
Cobalt, total	mg/L	0.00005	0.00008	0.00007	0.000080	0.000070	0.00001	13%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.28	<0.02	0.280	0.014	0.27	181%	
Iron, total	mg/L	0.02	0.04	0.04	0.040	0.040	0.00	0%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.05	0.04	0.050	0.040	0.01	22%	
Lithium, total	mg/L	0.02	0.04	0.04	0.040	0.040	0.00	0%	
Magnesium, dissolved	mg/L	0.2	7.5	7.5	7.50	7.50	0.0	0%	
Magnesium, total	mg/L	0.2	7.4	7.3	7.40	7.30	0.1	1%	
Manganese, dissolved	mg/L	0.0005	0.0007	0.0005	0.00070	0.00050	0.0002	33%	
Manganese, total	mg/L	0.0005	0.0013	0.0010	0.00130	0.00100	0.0003	26%	
Mercury, dissolved	ng/L	0.2	<1	<1	0.71	0.71	0.0	0%	
Mercury, total	ng/L	0.2	<1	<1	0.71	0.71	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.0037	0.0038	0.00370	0.00380	0.0001	3%	
Molybdenum, total	mg/L	0.0005	0.0041	0.0040	0.00410	0.00400	0.0001	2%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	6.3	6.3	6.30	6.30	0.0	0%	
Potassium, total	mg/L	0.3	6.1	6.1	6.10	6.10	0.0	0%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0033	0.0031	0.00330	0.00310	0.0002	6%	
Selenium, total	mg/L	0.0001	0.0027	0.0027	0.00270	0.00270	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	28.5	27.6	28.50	27.60	0.9	3%	
Sodium, total	mg/L	0.3	26.3	26.2	26.30	26.20	0.1	0%	
Strontium, dissolved	mg/L	0.01	0.22	0.21	0.220	0.210	0.01	5%	
Strontium, total	mg/L	0.01	0.20	0.20	0.200	0.200	0.00	0%	

Q1-2013			59772				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.0002	<0.0001	0.00020	0.00007	0.0001	96%	
Tin, total	mg/L	0.0001	0.0002	<0.0001	0.00020	0.00007	0.0001	96%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	ND	ND	ND	ND	ND	ND	
Uranium, total	mg/L	0.0001	ND	ND	ND	ND	ND	ND	
Vanadium, dissolved	mg/L	0.0002	0.0180	0.0183	0.01800	0.01830	0.0003	2%	
Vanadium, total	mg/L	0.0002	0.0182	0.0183	0.01820	0.01830	0.0001	1%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	132	131	132.0	131.0	1	1%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.02	0.03	0.020	0.030	0.01	40%	
Bicarbonate as CaCO3	mg/L	2	127	125	127.0	125.0	2	2%	
Carbonate as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Chloride	mg/L	0.5	10.5	10.4	10.47	10.37	0.1	1%	
Conductivity @25C	umhos/cm	1	370	370	370.0	370.0	0	0%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.57	0.57	0.570	0.570	0.00	0%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	1.18	1.18	1.180	1.180	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	1.18	1.18	1.180	1.180	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.3	8.3	8.30	8.30	0.0	0%	
pH measured at	C	0.1	21	21	21.0	21.0	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	280	280	280.0	280.0	0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0	0%	
Sulfate	mg/L	0.5	37.4	37.6	37.37	37.61	0.2	1%	
Total Alkalinity	mg/L	2	127	127	127.0	127.0	0	0%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q2-2013			GW-1				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.0005	0.0004	0.00050	0.00040	0.0001	22%	
Antimony, total	mg/L	0.0004	0.0004	0.0005	0.00040	0.00050	0.0001	22%	
Arsenic, dissolved	mg/L	0.0002	0.0304	0.0310	0.03040	0.03100	0.0006	2%	
Arsenic, total	mg/L	0.0002	0.0300	0.0297	0.03000	0.02970	0.0003	1%	
Barium, dissolved	mg/L	0.003	0.034	0.034	0.0340	0.0340	0.000	0%	
Barium, total	mg/L	0.003	0.028	0.028	0.0280	0.0280	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.08	0.08	0.080	0.080	0.00	0%	
Boron, total	mg/L	0.01	0.07	0.07	0.070	0.070	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	46.7	47.3	46.70	47.30	0.6	1%	
Calcium, total	mg/L	0.2	45.4	44.9	45.40	44.90	0.5	1%	
Chromium, dissolved	mg/L	0.0005	0.0008	0.0008	0.00080	0.00080	0.0000	0%	
Chromium, total	mg/L	0.0005	0.0010	0.0008	0.00100	0.00080	0.0002	22%	
Cobalt, dissolved	mg/L	0.00005	0.00013	0.00013	0.000130	0.000130	0.00000	0%	
Cobalt, total	mg/L	0.00005	0.00017	0.00016	0.000170	0.000160	0.00001	6%	
Copper, dissolved	mg/L	0.0005	0.0006	0.0005	0.00060	0.00050	0.0001	18%	
Copper, total	mg/L	0.0005	0.0008	<0.0005	0.00080	0.00035	0.0004	77%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Iron, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.05	0.05	0.050	0.050	0.00	0%	
Lithium, total	mg/L	0.02	0.04	0.04	0.040	0.040	0.00	0%	
Magnesium, dissolved	mg/L	0.2	8.9	9.1	8.90	9.10	0.2	2%	
Magnesium, total	mg/L	0.2	8.7	8.6	8.70	8.60	0.1	1%	
Manganese, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.6	0.6	0.60	0.60	0.0	0%	
Mercury, total	ng/L	0.2	0.8	0.5	0.80	0.50	0.3	46%	
Molybdenum, dissolved	mg/L	0.0005	0.0040	0.0040	0.00400	0.00400	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.0042	0.0043	0.00420	0.00430	0.0001	2%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	6.5	6.5	6.50	6.50	0.0	0%	
Potassium, total	mg/L	0.3	6.2	6.1	6.20	6.10	0.1	2%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0037	0.0038	0.00370	0.00380	0.0001	3%	
Selenium, total	mg/L	0.0001	0.0032	0.0032	0.00320	0.00320	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	27.3	27.7	27.30	27.70	0.4	1%	
Sodium, total	mg/L	0.3	26.5	26.2	26.50	26.20	0.3	1%	
Strontium, dissolved	mg/L	0.01	0.23	0.23	0.230	0.230	0.00	0%	
Strontium, total	mg/L	0.01	0.21	0.21	0.210	0.210	0.00	0%	

Q2-2013			GW-1				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.0037	0.0037	0.00370	0.00370	0.0000	0%	
Uranium, total	mg/L	0.0001	0.0040	0.0040	0.00400	0.00400	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.0184	0.0185	0.01840	0.01850	0.0001	1%	
Vanadium, total	mg/L	0.0002	0.0188	0.0188	0.01880	0.01880	0.0000	0%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	153	156	153.0	156.0	3	2%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.02	0.03	0.020	0.030	0.01	40%	
Bicarbonate as CaCO3	mg/L	2	145	145	145.0	145.0	0	0%	
Carbonate as CaCO3	mg/L	2	4	4	4.00	4.00	0	0%	
Chloride	mg/L	0.5	12.5	12.5	12.50	12.50	0	0%	
Conductivity @25C	umhos/cm	1	421	425	421.0	425.0	4	1%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.49	0.53	0.490	0.530	0.04	8%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	2.17	2.17	2.170	2.170	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	2.17	2.17	2.170	2.170	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.3	8.3	8.30	8.30	0.0	0%	
pH measured at	C	0.1	21	22	21.0	22.0	1	5%	
Residue, Filterable (TDS) @180C	mg/L	10	290	280	290.0	280.0	10	4%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	5	3.5	5.0	1.5	34%	
Sulfate	mg/L	0.5	35.1	37.5	35.10	37.50	2.4	7%	
Total Alkalinity	mg/L	2	149	149	149.0	149.0	0	0%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q3-2013			BISHOP				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.0043	0.0048	0.00430	0.00480	0.0005	11%	
Arsenic, total	mg/L	0.0002	0.0042	0.0044	0.00420	0.00440	0.0002	5%	
Barium, dissolved	mg/L	0.003	0.010	0.011	0.0100	0.0110	0.001	10%	
Barium, total	mg/L	0.003	0.015	0.014	0.0150	0.0140	0.001	7%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.21	0.20	0.210	0.200	0.01	5%	
Boron, total	mg/L	0.01	0.22	0.22	0.220	0.220	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	2.9	3.2	2.90	3.20	0.3	10%	
Calcium, total	mg/L	0.2	2.9	2.7	2.90	2.70	0.2	7%	
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.00012	0.00035	0.000120	0.000350	0.00023	98%	
Cobalt, total	mg/L	0.00005	0.00009	0.00009	0.000090	0.000090	0.00000	0%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.05	0.07	0.050	0.070	0.02	33%	
Lead, dissolved	mg/L	0.0001	0.0003	0.0003	0.00030	0.00030	0.0000	0%	
Lead, total	mg/L	0.0001	0.0003	0.0003	0.00030	0.00030	0.0000	0%	
Lithium, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lithium, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.5	0.6	0.50	0.60	0.1	18%	
Magnesium, total	mg/L	0.2	0.6	0.6	0.60	0.60	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.0075	0.0076	0.00750	0.00760	0.0001	1%	
Manganese, total	mg/L	0.0005	0.0093	0.0089	0.00930	0.00890	0.0004	4%	
Mercury, dissolved	ng/L	0.2	0.4	0.4	0.40	0.40	0.0	0%	
Mercury, total	ng/L	0.2	0.7	0.6	0.70	0.60	0.1	15%	
Molybdenum, dissolved	mg/L	0.0005	0.0088	0.0090	0.00880	0.00900	0.0002	2%	
Molybdenum, total	mg/L	0.0005	0.0094	0.0092	0.00940	0.00920	0.0002	2%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	3.8	3.8	3.80	3.80	0.0	0%	
Potassium, total	mg/L	0.3	4.2	4.2	4.20	4.20	0.0	0%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	<0.0001	0.0001	0.00007	0.00010	0.0000	34%	
Selenium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	77.6	77.5	77.60	77.50	0.1	0%	
Sodium, total	mg/L	0.3	81.9	81.4	81.90	81.40	0.5	1%	
Strontium, dissolved	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	
Strontium, total	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	

Q3-2013			BISHOP				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.0003	0.0003	0.00030	0.00030	0.0000	0%	
Uranium, total	mg/L	0.0001	0.0002	0.0002	0.00020	0.00020	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.0012	0.0014	0.00120	0.00140	0.0002	15%	
Vanadium, total	mg/L	0.0002	0.0012	0.0011	0.00120	0.00110	0.0001	9%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	9	11	9.0	11.0	2	20%	
Nitrogen, ammonia	mg/L	0.05	0.12	0.13	0.120	0.130	0.01	8%	
Phosphorus, total	mg/L	0.01	0.13	0.13	0.130	0.130	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	147	164	147.0	164.0	17	11%	
Carbonate as CaCO3	mg/L	2	5	6	5.00	6.00	1	18%	
Chloride	mg/L	0.5	7.5	7.4	7.51	7.43	0.08	1%	
Conductivity @25C	umhos/cm	1	384	380	384.0	380.0	4	1%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.76	0.76	0.760	0.760	0.00	0%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.06	0.06	0.060	0.060	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.06	0.06	0.060	0.060	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.06	0.08	0.060	0.080	0.02	29%	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.6	8.5	8.60	8.50	0.1	1%	
pH measured at	C	0.1	21	21	21.0	21.0	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	236	252	236.0	252.0	16	7%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0	0%	
Sulfate	mg/L	0.5	22.2	22.0	22.20	22.00	0.2	1%	
Total Alkalinity	mg/L	2	152	170	152.0	170.0	18	11%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q4-2013			GW-4				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	0.04	0.05	0.040	0.050	0.01	22%	
Aluminum, total	mg/L	0.03	1.13	0.84	1.130	0.840	0.29	29%	(4)
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.0118	0.0119	0.01180	0.01190	0.0001	1%	
Arsenic, total	mg/L	0.0002	0.0116	0.0113	0.01160	0.01130	0.0003	3%	
Barium, dissolved	mg/L	0.003	0.005	0.005	0.0050	0.0050	0.000	0%	
Barium, total	mg/L	0.003	0.008	0.007	0.0080	0.0070	0.001	13%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.00013	0.00009	0.000130	0.000090	0.00004	36%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.15	0.16	0.150	0.160	0.01	6%	
Boron, total	mg/L	0.01	0.14	0.14	0.140	0.140	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	3.6	3.5	3.60	3.50	0.1	3%	
Calcium, total	mg/L	0.2	4.2	4.0	4.20	4.00	0.2	5%	
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.00011	0.00007	0.000110	0.000070	0.00004	44%	
Cobalt, total	mg/L	0.00005	0.00009	0.00008	0.000090	0.000080	0.00001	12%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	0.0006	0.00035	0.00060	0.0002	52%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	0.02	0.014	0.020	0.01	34%	
Iron, total	mg/L	0.02	0.42	0.33	0.420	0.330	0.09	24%	(4)
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	0.0008	0.0007	0.00080	0.00070	0.0001	13%	
Lithium, dissolved	mg/L	0.02	0.09	0.09	0.090	0.090	0.00	0%	
Lithium, total	mg/L	0.02	0.09	0.09	0.090	0.090	0.00	0%	
Magnesium, dissolved	mg/L	0.2	<0.2	<0.2	0.14	0.14	0.0	0%	
Magnesium, total	mg/L	0.2	0.2	<0.2	0.20	0.14	0.1	34%	
Manganese, dissolved	mg/L	0.0005	0.0056	0.0054	0.00560	0.00540	0.0002	4%	
Manganese, total	mg/L	0.0005	0.0129	0.0116	0.01290	0.01160	0.0013	11%	
Mercury, dissolved	ng/L	0.2	<0.2	<0.2	0.14	0.14	0.0	0%	
Mercury, total	ng/L	0.2	1.1	0.5	1.10	0.50	0.6	75%	
Molybdenum, dissolved	mg/L	0.0005	0.0099	0.0097	0.00990	0.00970	0.0002	2%	
Molybdenum, total	mg/L	0.0005	0.0088	0.0088	0.00880	0.00880	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.7	0.7	0.70	0.70	0.0	0%	
Potassium, total	mg/L	0.3	0.7	0.7	0.70	0.70	0.0	0%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Selenium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	145	146	145.00	146.00	1	1%	
Sodium, total	mg/L	0.3	148	149	148.00	149.00	1	1%	
Strontium, dissolved	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	
Strontium, total	mg/L	0.01	0.03	0.03	0.030	0.030	0.00	0%	

Q4-2013			GW-4				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	0.012	0.010	0.0120	0.0100	0.002	18%	
Uranium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Uranium, total	mg/L	0.0001	0.0003	0.0002	0.00030	0.00020	0.0001	40%	
Vanadium, dissolved	mg/L	0.0002	<0.0002	<0.0002	0.00014	0.00014	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.0003	0.0003	0.00030	0.00030	0.0000	0%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	9	9	9.0	9.0	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.07	<0.05	0.070	0.035	0.03	66%	
Phosphorus, total	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	177	177	177.0	177.0	0	0%	
Carbonate as CaCO3	mg/L	2	14	14	14.00	14.00	0	0%	
Chloride	mg/L	0.5	27.0	27.0	27.00	27.00	0	0%	
Conductivity @25C	umhos/cm	1	665	666	665.0	666.0	1	0%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	2.21	2.21	2.210	2.210	0.00	0%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrate/Nitrite as N	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	ND	ND	ND	ND	ND	ND	
pH	units	0.1	8.6	8.7	8.60	8.70	0.1	1%	
pH measured at	C	0.1	21	21	21.0	21.0	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	400	410	400.0	410.0	10	2%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	21	12	21.0	12.0	9	55%	
Sulfate	mg/L	0.5	89.1	89.1	89.10	89.10	0.0	0%	
Total Alkalinity	mg/L	2	191	191	191.0	191.0	0	0%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by $\sqrt{2}$

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q1-2013			TWIN SPRINGS SOUTH				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	0.03	0.021	0.030	0.01	34%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.0433	0.0413	0.04330	0.04130	0.0020	5%	
Arsenic, total	mg/L	0.0002	0.0445	0.0436	0.04450	0.04360	0.0009	2%	
Barium, dissolved	mg/L	0.003	0.007	0.008	0.0070	0.0080	0.001	13%	
Barium, total	mg/L	0.003	0.008	0.007	0.0080	0.0070	0.001	13%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.10	0.10	0.095	0.097	0.00	2%	
Boron, total	mg/L	0.01	0.10	0.10	0.100	0.100	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	28.2	27.9	28.20	27.90	0.3	1%	
Calcium, total	mg/L	0.2	26.3	26.1	26.30	26.10	0.2	1%	
Chromium, dissolved	mg/L	0.0005	0.0007	0.0006	0.00070	0.00060	0.0001	15%	
Chromium, total	mg/L	0.0005	0.0008	0.0008	0.00080	0.00080	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.00017	0.00011	0.000170	0.000110	0.00006	43%	
Cobalt, total	mg/L	0.00005	0.00009	0.00007	0.000090	0.000070	0.00002	25%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.05	0.04	0.050	0.040	0.01	22%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lithium, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	16.1	15.9	16.10	15.90	0.2	1%	
Magnesium, total	mg/L	0.2	15.3	15.1	15.30	15.10	0.2	1%	
Manganese, dissolved	mg/L	0.0005	0.0060	0.0057	0.00600	0.00570	0.0003	5%	
Manganese, total	mg/L	0.0005	0.0198	0.0136	0.01980	0.01360	0.0062	37%	(4)
Mercury, dissolved	ng/L	0.2	<0.4	<0.4	0.28	0.28	0.0	0%	
Mercury, total	ng/L	0.2	<0.4	<1	0.28	0.71	0.4	86%	
Molybdenum, dissolved	mg/L	0.0005	0.0095	0.0088	0.00950	0.00880	0.0007	8%	
Molybdenum, total	mg/L	0.0005	0.0106	0.0107	0.01060	0.01070	0.0001	1%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	9.4	9.6	9.40	9.60	0.2	2%	
Potassium, total	mg/L	0.3	9.0	8.9	9.00	8.90	0.1	1%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0046	0.0047	0.00460	0.00470	0.0001	2%	
Selenium, total	mg/L	0.0001	0.0042	0.0042	0.00420	0.00420	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	46.3	46.7	46.30	46.70	0.4	1%	
Sodium, total	mg/L	0.3	43.1	42.5	43.10	42.50	0.6	1%	
Strontium, dissolved	mg/L	0.01	0.16	0.16	0.160	0.160	0.00	0%	
Strontium, total	mg/L	0.01	0.15	0.15	0.150	0.150	0.00	0%	

Q1-2013			TWIN SPRINGS SOUTH				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.0003	<0.0001	0.00030	0.00007	0.0002	124%	
Tin, total	mg/L	0.0001	0.0002	<0.0001	0.00020	0.00007	0.0001	96%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	ND	ND	ND	ND	ND	ND	
Uranium, total	mg/L	0.0001	ND	ND	ND	ND	ND	ND	
Vanadium, dissolved	mg/L	0.0002	0.0418	0.0400	0.04180	0.04000	0.0018	4%	
Vanadium, total	mg/L	0.0002	0.0462	0.0459	0.04620	0.04590	0.0003	1%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	137	135	137.0	135.0	2	1%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.03	0.03	0.030	0.030	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	157	157	157.0	157.0	0	0%	
Carbonate as CaCO3	mg/L	2	3	4	3.00	4.00	1	29%	
Chloride	mg/L	0.5	10.9	10.9	10.85	10.86	0.01	0%	
Conductivity @25C	umhos/cm	1	442	442	442.0	442.0	0	0%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.72	0.73	0.720	0.730	0.01	1%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	1.96	1.95	1.960	1.950	0.01	1%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	1.96	1.95	1.960	1.950	0.01	1%	
Nitrate/Nitrite as N	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.3	8.3	8.30	8.30	0.0	0%	
pH measured at	C	0.1	19	19	19.0	19.0	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	310	320	310.0	320.0	10	3%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0	0%	
Sulfate	mg/L	0.5	45.4	45.5	45.39	45.50	0.1	0%	
Total Alkalinity	mg/L	2	160	161	160.0	161.0	1	1%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q2-2013			WHISKEY SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.0009	0.0008	0.00090	0.00080	0.0001	12%	
Antimony, total	mg/L	0.0004	0.0008	0.0007	0.00080	0.00070	0.0001	13%	
Arsenic, dissolved	mg/L	0.0002	0.0898	0.0889	0.08980	0.08890	0.0009	1%	
Arsenic, total	mg/L	0.0002	0.0846	0.0821	0.08460	0.08210	0.0025	3%	
Barium, dissolved	mg/L	0.003	0.045	0.046	0.0450	0.0460	0.001	2%	
Barium, total	mg/L	0.003	0.046	0.047	0.0460	0.0470	0.001	2%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.17	0.18	0.170	0.180	0.01	6%	
Boron, total	mg/L	0.01	0.18	0.18	0.180	0.180	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	37.2	37.2	37.20	37.20	0	0%	
Calcium, total	mg/L	0.2	37.2	36.8	37.20	36.80	0.4	1%	
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.00051	0.00022	0.000510	0.000220	0.00029	79%	
Cobalt, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.0017	0.0017	0.00170	0.00170	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.02	<0.02	0.020	0.014	0.01	34%	
Iron, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.11	0.11	0.110	0.110	0.00	0%	
Lithium, total	mg/L	0.02	0.11	0.10	0.110	0.100	0.01	10%	
Magnesium, dissolved	mg/L	0.2	6.2	6.2	6.20	6.20	0.0	0%	
Magnesium, total	mg/L	0.2	6.1	6.1	6.10	6.10	0.0	0%	
Manganese, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.4	0.4	0.40	0.40	0.0	0%	
Mercury, total	ng/L	0.2	0.4	0.3	0.40	0.30	0.1	29%	
Molybdenum, dissolved	mg/L	0.0005	0.0210	0.0214	0.02100	0.02140	0.0004	2%	
Molybdenum, total	mg/L	0.0005	0.0212	0.0210	0.02120	0.02100	0.0002	1%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	6.0	6.0	6.00	6.00	0.0	0%	
Potassium, total	mg/L	0.3	5.9	5.8	5.90	5.80	0.1	2%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0022	0.0022	0.00220	0.00220	0.0000	0%	
Selenium, total	mg/L	0.0001	0.0021	0.0021	0.00210	0.00210	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	70.8	70.6	70.80	70.60	0.2	0%	
Sodium, total	mg/L	0.3	70.7	69.6	70.70	69.60	1.1	2%	
Strontium, dissolved	mg/L	0.01	0.16	0.16	0.160	0.160	0.00	0%	
Strontium, total	mg/L	0.01	0.16	0.16	0.160	0.160	0.00	0%	

Q2-2013			WHISKEY SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.0001	<0.0001	0.00010	0.00007	0.0000	34%	
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.0054	0.0055	0.00540	0.00550	0.0001	2%	
Uranium, total	mg/L	0.0001	0.0055	0.0054	0.00550	0.00540	0.0001	2%	
Vanadium, dissolved	mg/L	0.0002	0.0215	0.0206	0.02150	0.02060	0.0009	4%	
Vanadium, total	mg/L	0.0002	0.0217	0.0215	0.02170	0.02150	0.0002	1%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	118	118	118.0	118.0	0	0%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.04	0.05	0.040	0.050	0.01	22%	
Bicarbonate as CaCO3	mg/L	2	137	136	137.0	136.0	1	1%	
Carbonate as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Chloride	mg/L	0.5	7.5	7.2	7.46	7.23	0.23	3%	
Conductivity @25C	umhos/cm	1	546	542	546.0	542.0	4	1%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.73	0.71	0.730	0.710	0.02	3%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.05	0.06	0.050	0.060	0.01	18%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.05	0.06	0.050	0.060	0.01	18%	
Nitrate/Nitrite as N	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.2	8.2	8.20	8.20	0.0	0%	
pH measured at	C	0.1	23	22	23.0	22.0	1	4%	
Residue, Filterable (TDS) @180C	mg/L	10	400	390	400.0	390.0	10	3%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0.0	0%	
Sulfate	mg/L	0.5	137.0	133.0	137.00	133.00	4.0	3%	
Total Alkalinity	mg/L	2	137	136	137.0	136.0	1	1%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q3-2013			SAGEBRUSH SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	<0.0008	<0.0004	0.00057	0.00028	0.0003	67%	
Arsenic, dissolved	mg/L	0.0002	0.0075	0.0076	0.00750	0.00760	0.0001	1%	
Arsenic, total	mg/L	0.0002	0.0074	0.0071	0.00740	0.00710	0.0003	4%	
Barium, dissolved	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Barium, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.0001	<0.00005	0.000071	0.000035	0.00004	67%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.05	0.04	0.050	0.040	0.01	22%	
Boron, total	mg/L	0.01	0.05	0.05	0.050	0.050	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0002	<0.0001	0.00014	0.00007	0.0001	67%	
Calcium, dissolved	mg/L	0.2	43.7	44.9	43.70	44.90	1.2	3%	
Calcium, total	mg/L	0.2	45.7	45.5	45.70	45.50	0.2	0%	
Chromium, dissolved	mg/L	0.0005	0.0010	0.0010	0.00100	0.00100	0.0000	0%	
Chromium, total	mg/L	0.0005	0.0010	0.0011	0.00100	0.00110	0.0001	10%	
Cobalt, dissolved	mg/L	0.00005	0.00017	0.00011	0.000170	0.000110	0.00006	43%	
Cobalt, total	mg/L	0.00005	<0.0001	0.00010	0.000071	0.000100	0.00003	34%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.001	<0.0005	0.00071	0.00035	0.0004	67%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.08	<0.02	0.080	0.014	0.07	140%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0002	<0.0001	0.00014	0.00007	0.0001	67%	
Lithium, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lithium, total	mg/L	0.02	<0.02	0.02	0.014	0.020	0.01	34%	
Magnesium, dissolved	mg/L	0.2	9.4	9.7	9.40	9.70	0.3	3%	
Magnesium, total	mg/L	0.2	10.4	10.0	10.40	10.00	0.4	4%	
Manganese, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	<0.001	0.0027	0.00071	0.00270	0.0020	117%	
Mercury, dissolved	ng/L	0.2	0.3	<0.2	0.30	0.14	0.2	72%	
Mercury, total	ng/L	0.2	<0.2	<0.2	0.14	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.0018	0.0017	0.00180	0.00170	0.0001	6%	
Molybdenum, total	mg/L	0.0005	0.0020	0.0019	0.00200	0.00190	0.0001	5%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.001	<0.0006	0.00071	0.00042	0.0003	50%	
Potassium, dissolved	mg/L	0.3	4.9	4.9	4.90	4.90	0.0	0%	
Potassium, total	mg/L	0.3	5.0	5.6	5.00	5.60	0.6	11%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0011	0.0010	0.00110	0.00100	0.0001	10%	
Selenium, total	mg/L	0.0001	0.0010	0.0010	0.00100	0.00100	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.0001	<0.00005	0.000071	0.000035	0.00004	67%	
Sodium, dissolved	mg/L	0.3	19.5	19.8	19.50	19.80	0.3	2%	
Sodium, total	mg/L	0.3	20.7	20.8	20.70	20.80	0.1	0%	
Strontium, dissolved	mg/L	0.01	0.20	0.20	0.200	0.200	0.00	0%	
Strontium, total	mg/L	0.01	0.21	0.20	0.210	0.200	0.01	5%	

Q3-2013			SAGEBRUSH SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0002	<0.0001	0.00014	0.00007	0.0001	67%	
Tin, dissolved	mg/L	0.0001	0.0004	<0.0001	0.00040	0.00007	0.0003	140%	
Tin, total	mg/L	0.0001	<0.0002	<0.0001	0.00014	0.00007	0.0001	67%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	0.008	0.0035	0.0080	0.004	77%	
Uranium, dissolved	mg/L	0.0001	0.0040	0.0040	0.00400	0.00400	0.0000	0%	
Uranium, total	mg/L	0.0001	0.0038	0.0038	0.00380	0.00380	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.0206	0.0201	0.02060	0.02010	0.0005	2%	
Vanadium, total	mg/L	0.0002	0.0209	0.0206	0.02090	0.02060	0.0003	1%	
Zinc, dissolved	mg/L	0.01	<0.01	<0.01	0.007	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.01	<0.01	0.010	0.007	0.00	34%	
Hardness as CaCO3	mg/L	1	148	152	148.0	152.0	4	3%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	152	152	152.0	152.0	0	0%	
Carbonate as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Chloride	mg/L	0.5	11.4	11.4	11.40	11.40	0	0%	
Conductivity @25C	umhos/cm	1	379	379	379.0	379.0	0	0%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.34	0.34	0.340	0.340	0.00	0%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	2.54	2.55	2.540	2.550	0.01	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	2.54	2.55	2.540	2.550	0.01	0%	
Nitrate/Nitrite as N	mg/L	0.02	2.48	2.45	2.480	2.450	0.03	1%	
Nitrite as N, dissolved	mg/L	0.01	<0.01	<0.01	0.01	0.01	0.00	0%	
pH	units	0.1	8.2	8.2	8.20	8.20	0.0	0%	
pH measured at	C	0.1	22	22	22.0	22.0	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	296	298	296.0	298.0	2	1%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0	0%	
Sulfate	mg/L	0.5	22.0	22.2	22.00	22.20	0.2	1%	
Total Alkalinity	mg/L	2	152	152	152.0	152.0	0	0%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q4-2013			SAGEBRUSH SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Aluminum, dissolved	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	<0.03	<0.03	0.021	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.00028	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.0072	0.0072	0.00720	0.00720	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.0079	0.0077	0.00790	0.00770	0.0002	3%	
Barium, dissolved	mg/L	0.003	0.004	0.004	0.0040	0.0040	0.000	0%	
Barium, total	mg/L	0.003	0.004	0.004	0.0040	0.0040	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	<0.04	<0.04	0.028	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.06	0.06	0.060	0.060	0.00	0%	
Boron, total	mg/L	0.01	0.06	0.06	0.060	0.060	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	47	46.6	47.00	46.60	0.4	1%	
Calcium, total	mg/L	0.2	46.6	45.9	46.60	45.90	0.7	2%	
Chromium, dissolved	mg/L	0.0005	0.0010	0.0011	0.00100	0.00110	0.0001	10%	
Chromium, total	mg/L	0.0005	0.0011	0.0011	0.00110	0.00110	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.00046	0.00015	0.000460	0.000150	0.00031	102%	
Cobalt, total	mg/L	0.00005	0.00009	0.00009	0.000090	0.000090	0.00000	0%	
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Gallium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Iron, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.02	0.02	0.020	0.020	0.00	0%	
Lithium, total	mg/L	0.02	<0.02	<0.02	0.014	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	10.1	10.1	10.10	10.10	0.0	0%	
Magnesium, total	mg/L	0.2	10.0	9.9	10.00	9.90	0.1	1%	
Manganese, dissolved	mg/L	0.0005	0.0008	<0.0005	0.00080	0.00035	0.0004	77%	
Manganese, total	mg/L	0.0005	<0.0005	<0.0005	0.00035	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	<0.2	<0.2	0.14	0.14	0.0	0%	
Mercury, total	ng/L	0.2	<0.2	<0.2	0.14	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.0018	0.0018	0.00180	0.00180	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.0018	0.0019	0.00180	0.00190	0.0001	5%	
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.00042	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	5.1	5.0	5.10	5.00	0.1	2%	
Potassium, total	mg/L	0.3	5.1	5.0	5.10	5.00	0.1	2%	
Scandium, dissolved	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Scandium, total	mg/L	0.1	<0.1	<0.1	0.07	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.0011	0.0011	0.00110	0.00110	0.0000	0%	
Selenium, total	mg/L	0.0001	0.0011	0.0011	0.00110	0.00110	0.0000	0%	
Silver, dissolved	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	<0.00005	<0.00005	0.000035	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	20.5	20.4	20.50	20.40	0.1	0%	
Sodium, total	mg/L	0.3	20.3	20	20.30	20.00	0.3	1%	
Strontium, dissolved	mg/L	0.01	0.21	0.21	0.210	0.210	0.00	0%	
Strontium, total	mg/L	0.01	0.21	0.20	0.210	0.200	0.01	5%	

Q4-2013			SAGEBRUSH SPRING				Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]			
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.0002	0.0001	0.00020	0.00010	0.0001	67%	
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.00007	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	<0.005	<0.005	0.0035	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.0038	0.0038	0.00380	0.00380	0.0000	0%	
Uranium, total	mg/L	0.0001	0.0040	0.0039	0.00400	0.00390	0.0001	3%	
Vanadium, dissolved	mg/L	0.0002	0.0205	0.0202	0.02050	0.02020	0.0003	1%	
Vanadium, total	mg/L	0.0002	0.0211	0.0209	0.02110	0.02090	0.0002	1%	
Zinc, dissolved	mg/L	0.01	0.02	0.02	0.020	0.020	0.00	0%	
Zinc, total	mg/L	0.01	0.01	0.02	0.010	0.020	0.01	67%	
Hardness as CaCO3	mg/L	1	159	158	159.0	158.0	1	1%	
Nitrogen, ammonia	mg/L	0.05	<0.05	<0.05	0.035	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.02	0.01	0.020	0.010	0.01	67%	
Bicarbonate as CaCO3	mg/L	2	157	158	157.0	158.0	1	1%	
Carbonate as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Chloride	mg/L	0.5	10.6	10.6	10.60	10.60	0	0%	
Conductivity @25C	umhos/cm	1	389	385	389.0	385.0	4	1%	
Cyanide, total	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	<0.003	<0.003	0.0021	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.36	0.36	0.360	0.360	0.00	0%	
Hydroxide as CaCO3	mg/L	2	<2	<2	1.41	1.41	0	0%	
Nitrate as N, dissolved	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	ND	ND	ND	ND	ND	ND	
Nitrate/Nitrite as N	mg/L	0.02	3.09	3.08	3.090	3.080	0.01	0%	
Nitrite as N, dissolved	mg/L	0.01	ND	ND	ND	ND	ND	ND	
pH	units	0.1	8.2	8.2	8.20	8.20	0.0	0%	
pH measured at	C	0.1	22	21	22.0	21.0	1	5%	
Residue, Filterable (TDS) @180C	mg/L	10	270	270	270.0	270.0	0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	<5	<5	3.5	3.5	0	0%	
Sulfate	mg/L	0.5	17.9	18.0	17.90	18.00	0.1	1%	
Total Alkalinity	mg/L	2	157	158	157.0	158.0	1	1%	

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

2013 Well Pump Setup			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, dissolved	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.000	0.0000	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.000	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.000	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.00	0.001	0.0004	112%	
Barium, dissolved	mg/L	0.003	0.0021	0.00	0.004	0.002	61%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, dissolved	mg/L	0.0005	0.000	0.00	0.002	0.00	147%	
Boron, total	mg/L	0.0005	0.000	0.00	0.002	0.00	142%	
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Calcium, dissolved	mg/L	0.2	0.14	0.30	0.300	0.158578644	72%	
Calcium, total	mg/L	0.2	0.14	0.60	0.600	0.458578644	124%	
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.000035	0.00	0.001	0.00050	175%	(4)
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Gallium, dissolved	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Iron, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.14	<0.2	0.141	0.0	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.141	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.00035	0.00	0.001	0.0005	87%	
Manganese, total	mg/L	0.0005	0.00035	0.00	0.003	0.0028	160%	(4)
Mercury, dissolved	ng/L	0.2	0.14	0.50	0.500	0.4	112%	
Mercury, total	ng/L	0.2	0.14	0.40	0.400	0.3	96%	
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.000	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.000	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.21	<0.3	0.212	0.0	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.212	0.0	0%	
Scandium, dissolved	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Silver, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Sodium, dissolved	mg/L	0.3	0.21	0.50	0.500	0.287867966	81%	
Sodium, total	mg/L	0.3	0.21	0.50	0.500	0.287867966	81%	
Strontium, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	

2013 Well Pump Setup			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.00007	0.00	0.000	0.0001	96%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Titanium, dissolved	mg/L	0.005	0.0035	<0.005	0.004	0.000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.004	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.00007	ND	ND	ND	ND	
Uranium, total	mg/L	0.0001	0.00007	ND	ND	ND	ND	
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.000	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.000	0.0000	0%	
Zinc, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	1.00	1.000	0.292893219	34%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	2.00	2.000	0.585786438	34%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.414	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.354	0.00	0%	
Conductivity @25C	umhos/cm	1	0.7	3.00	3.000	2.292893219	124%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.414	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.014	0.02	0.020	0.01	34%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	0.02	0.020	0.01	34%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
pH	units	0.1	NA	6.70	6.700	NA	NA	
pH measured at	C	0.1	NA	23.00	23.000	NA	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	<10	7.071	0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.536	0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.354	0.0	0%	
Total Alkalinity	mg/L	2	1.4	2.00	2.000	0.585786438	34%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q1-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, dissolved	mg/L	0.03	0.021	0.04	0.040	0.02	61%	
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0003	0.00030	0.0002	72%	
Barium, dissolved	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, dissolved	mg/L	0.0005	0.000	<0.0005	0.000	0.00	0%	
Boron, total	mg/L	0.0005	0.000	<0.0005	0.000	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.000035	0.00014	0.000140	0.00010	119%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.00035	0.0008	0.00080	0.0004	77%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.014	0.09	0.090	0.08	146%	
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.21	0.7	0.70	0.5	107%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	

Q1-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.00007	ND	ND	ND	ND	
Uranium, total	mg/L	0.0001	0.00007	ND	ND	ND	ND	
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	<1	0.7	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	0.5400	0.54	0.19	42%	
Conductivity @25C	umhos/cm	1	0.7	<1	0.7	0	0%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
pH	units	0.1	NA	6.3	6.30	NA	NA	
pH measured at	C	0.1	NA	19.0	19.00	NA	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	<10	7.1	0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q2-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, dissolved	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Barium, dissolved	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.000035	0.00007	0.000070	0.00003	66%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.00035	0.0007	0.00070	0.0003	66%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.014	0.02	0.020	0.01	34%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	

Q2-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	<1	0.7	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	ND	ND	0.00	ND	
Conductivity @25C	umhos/cm	1	0.7	<1	0.7	0	0%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	ND	ND	0.00	ND	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	ND	ND	
Nitrite as N, dissolved	mg/L	0.01	0.007	ND	ND	0.00	ND	
pH	units	0.1	NA	6.20	6.20	NA	NA	
pH measured at	C	0.1	NA	21.00	21.00	NA	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	ND	ND	0	ND	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0	0%	
Sulfate	mg/L	0.5	0.35	ND	ND	0.0	ND	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q3-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, dissolved	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0003	0.00030	0.0002	72%	
Barium, dissolved	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.000035	0.00024	0.000240	0.00020	149%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	

Q3-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	<1	0.7	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	0.0100	0.010	0.00	34%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.35	0.00	0%	
Conductivity @25C	umhos/cm	1	0.7	1.0	1.00	0.29	34%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
pH	units	0.1	NA	6.30	6.30	NA	NA	
pH measured at	C	0.1	NA	22.00	22.00	NA	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	22	22.0	14.9	103%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q4-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, dissolved	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0004	0.00040	0.0003	96%	
Barium, dissolved	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, dissolved	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, dissolved	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, dissolved	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, dissolved	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, dissolved	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, dissolved	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	

Q4-2013			DI WATER	EQUIPMENT		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, dissolved	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	<1	0.7	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.35	0.00	0%	
Conductivity @25C	umhos/cm	1	0.7	1.0	1.00	0.29	34%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Nitrate as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	0.007	ND	ND	0.00	ND	
pH	units	0.1	NA	6.20	6.20	NA	NA	
pH measured at	C	0.1	NA	21.00	21.00	NA	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	<10	7.1	0.0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

2013 Well Pump Setup			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.000	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.00	0.001	0.0005	124%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, total	mg/L	0.01	0.007	0.00	0.001	0.01	174%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.141	0	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.141	0.0	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Mercury, total	ng/L	0.2	0.14	0.40	0.400	0.3	96%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.000	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.000	0.0000	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.212	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.071	0.0	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000	0.00000	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.212	0	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.000	0.0000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.004	0.000	0%	
Uranium, total	mg/L	0.0001	0.00007	ND	ND	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.000	0.0000	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	ND	ND	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.414	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.414	0	0%	
Chloride	mg/L	0.5	0.35	ND	ND	0	0%	
Conductivity @25C	umhos/cm	1	0.7	1.00	1.000	0.3	34%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.002	0.000	0%	
Fluoride	mg/L	0.10	0.071	ND	ND	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.414	0	0%	

2013 Well Pump Setup			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Nitrate as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	0.007	ND	ND	0.00	0%	
pH	units	0.1	NA	6.00	6.000	0.0	0%	
pH measured at	C	0.1	NA	23.00	23.000	0	0%	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	ND	ND	0.0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.536	0.0	0%	
Sulfate	mg/L	0.5	0.35	ND	ND	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.414	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q1-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0006	0.00060	0.0005	124%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, total	mg/L	0.01	0.007	0.00	0.002	0.01	126%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	0.0006	0.00060	0.0005	158%	(4)
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, total	mg/L	0.0001	0.00007	ND	ND	0.0000	ND	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	ND	ND	0	ND	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	ND	ND	0	ND	
Conductivity @25C	umhos/cm	1	0.7	<1	0.7	0.0	0%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	ND	ND	0.00	ND	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	

Q1-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Nitrate as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrite as N, dissolved	mg/L	0.01	0.007	ND	ND	0.00	ND	
pH	units	0.1	NA	NA	NA	0.0	NA	
pH measured at	C	0.1	NA	NA	NA	0	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	ND	ND	0.0	ND	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0.0	0%	
Sulfate	mg/L	0.5	0.35	ND	ND	0.0	ND	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q2-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	<1	0.7	0	0%	
Nitrogen, ammonia	mg/L	0.05	0.035	0.090	0.090	0.05	87%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.35	0	0%	
Conductivity @25C	umhos/cm	1	0.7	<1	0.7	0.0	0%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	

Q2-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Nitrate as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrite as N, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
pH	units	0.1	NA	5.90	5.90	0.0	NA	
pH measured at	C	0.1	NA	21.00	21.00	0	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	<10	7.1	0.0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0.0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q3-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0004	0.00040	0.0003	96%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, total	mg/L	0.00005	0.000035	0.00012	0.000120	0.00008	109%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, total	mg/L	0.0001	0.00007	0.0001	0.00010	0.0000	34%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, total	mg/L	0.00005	0.000035	0.00012	0.000120	0.00008	109%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, total	mg/L	0.0001	0.00007	0.0002	0.00020	0.0001	96%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Thallium, total	mg/L	0.0001	0.00007	0.0001	0.00010	0.0000	34%	
Tin, total	mg/L	0.0001	0.00007	0.0001	0.00010	0.0000	34%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, total	mg/L	0.0001	0.00007	0.0001	0.00010	0.0000	34%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	ND	ND	0	ND	
Nitrogen, ammonia	mg/L	0.05	0.035	0.0500	0.050	0.01	34%	
Phosphorus, total	mg/L	0.01	0.007	0.0100	0.010	0.00	34%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.35	0	0%	
Conductivity @25C	umhos/cm	1	0.7	1.0000	1.0	0.3	34%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	

Q3-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Nitrate as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrate/Nitrite as N	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
pH	units	0.1	NA	6.00	6.00	0.0	NA	
pH measured at	C	0.1	NA	22.00	22.00	0	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	18	18.0	10.9	87%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0.0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q4-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Aluminum, total	mg/L	0.03	0.021	<0.03	0.021	0.00	0%	
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.0000	0%	
Arsenic, total	mg/L	0.0002	0.00014	0.0007	0.00070	0.0006	133%	
Barium, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Beryllium, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Bismuth, total	mg/L	0.04	0.028	<0.04	0.028	0.00	0%	
Boron, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Calcium, total	mg/L	0.2	0.14	<0.2	0.14	0	0%	
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Cobalt, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Gallium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Iron, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Lithium, total	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Magnesium, total	mg/L	0.2	0.14	<0.2	0.14	0.0	0%	
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Mercury, total	ng/L	0.2	0.14	<0.2	0.14	0.0	0%	
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.0000	0%	
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.0000	0%	
Potassium, total	mg/L	0.3	0.21	<0.3	0.21	0.0	0%	
Scandium, total	mg/L	0.1	0.07	<0.1	0.07	0.0	0%	
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Silver, total	mg/L	0.00005	0.000035	<0.00005	0.000035	0.00000	0%	
Sodium, total	mg/L	0.3	0.21	<0.3	0.21	0	0%	
Strontium, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Titanium, total	mg/L	0.005	0.0035	<0.005	0.0035	0.000	0%	
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.0000	0%	
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.0000	0%	
Zinc, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Hardness as CaCO3	mg/L	1	0.7	ND	ND	0	ND	
Nitrogen, ammonia	mg/L	0.05	0.035	<0.05	0.035	0.00	0%	
Phosphorus, total	mg/L	0.01	0.007	<0.01	0.007	0.00	0%	
Bicarbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Carbonate as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	
Chloride	mg/L	0.5	0.35	<0.5	0.35	0	0%	
Conductivity @25C	umhos/cm	1	0.7	<1	0.7	0	0%	
Cyanide, total	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Cyanide, WAD	mg/L	0.003	0.0021	<0.003	0.0021	0.000	0%	
Fluoride	mg/L	0.10	0.071	<0.1	0.071	0.00	0%	
Hydroxide as CaCO3	mg/L	2	1.4	<2	1.4	0	0%	

Q4-2013			DI WATER	TRANSFER		Difference[2]	RPD[3] (%)	Comments
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[1]			
Nitrate as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N, dissolved	mg/L	0.02	0.014	ND	ND	0.00	ND	
Nitrate/Nitrite as N	mg/L	0.02	0.014	<0.02	0.014	0.00	0%	
Nitrite as N, dissolved	mg/L	0.01	0.007	ND	ND	0.00	ND	
pH	units	0.1	NA	6.00	6.00	0.0	NA	
pH measured at	C	0.1	NA	21.00	21.00	0	NA	
Residue, Filterable (TDS) @180C	mg/L	10	7.1	<10	7.1	0	0%	
Residue, Non-Filterable (TSS) @105C	mg/L	5	3.5	<5	3.5	0	0%	
Sulfate	mg/L	0.5	0.35	<0.5	0.35	0.0	0%	
Total Alkalinity	mg/L	2	1.4	<2	1.4	0	0%	

[1]Reported sample values below detection levels, in addition to presumed optimal DI conditions, were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]If any result (sample or duplicate) is less than the five times the MDL then any difference between the results is generally considered insignificant

[3]RPD of less than 20% between samples is generally considered acceptable (within laboratory testing error)

[4]RPD exceeded 20% and the sample and/or duplicate results were above the RL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q1-2014			59760				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Aluminum, total	mg/L	0.0300	0.5900	0.3700	0.5900	0.3700	0.2200	46%
Antimony, dissolved	mg/L	0.0004	0.0005	0.0005	0.0005	0.0005	0.0000	0%
Antimony, total	mg/L	0.0004	0.0006	0.0005	0.0006	0.0005	0.0001	18%
Arsenic, dissolved	mg/L	0.0002	0.0282	0.0221	0.0282	0.0221	0.0061	24%
Arsenic, total	mg/L	0.0002	0.0245	0.0251	0.0245	0.0251	0.0006	2%
Barium, dissolved	mg/L	0.0030	0.0460	0.0480	0.0460	0.0480	0.0020	4%
Barium, total	mg/L	0.0030	0.0550	0.0560	0.0550	0.0560	0.0010	2%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Bicarbonate as CaCO3	mg/L	2.0000	132.0000	116.0000	132.0000	116.0000	16.0000	13%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Boron, dissolved	mg/L	0.0100	0.0800	0.0700	0.0800	0.0700	0.0100	13%
Boron, total	mg/L	0.0100	0.0700	0.0700	0.0700	0.0700	0.0000	0%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	38.8000	38.4000	38.8000	38.4000	0.4000	1%
Calcium, total	mg/L	0.1000	39.0000	38.5000	39.0000	38.5000	0.5000	1%
Carbonate as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Chloride	mg/L	0.5000	9.5700	9.1300	9.5700	9.1300	0.4400	5%
Chromium, dissolved	mg/L	0.0005	0.0007	0.0006	0.0007	0.0006	0.0001	15%
Chromium, total	mg/L	0.0005	0.0007	0.0008	0.0007	0.0008	0.0001	13%
Cobalt, dissolved	mg/L	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	43%
Cobalt, total	mg/L	0.0001	0.0002	0.0002	0.0002	0.0002	0.0000	6%
Conductivity @25C	umhos/cm	1.0000	380.0000	371.0000	380.0000	371.0000	9.0000	2%
Copper, dissolved	mg/L	0.0005	0.0062	0.0040	0.0062	0.0040	0.0022	43%
Copper, total	mg/L	0.0005	0.0115	0.0080	0.0115	0.0080	0.0035	36%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.1000	0.5000	0.4800	0.5000	0.4800	0.0200	4%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	1.0000	124.0000	122.0000	124.0000	122.0000	2.0000	2%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Iron, total	mg/L	0.0200	0.2000	0.1200	0.2000	0.1200	0.0800	50%
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lead, total	mg/L	0.0001	0.0007	0.0004	0.0007	0.0004	0.0003	55%
Lithium, dissolved	mg/L	0.0080	0.0470	0.0460	0.0470	0.0460	0.0010	2%
Lithium, total	mg/L	0.0080	0.0550	0.0550	0.0550	0.0550	0.0000	0%
Magnesium, dissolved	mg/L	0.2000	6.5000	6.4000	6.5000	6.4000	0.1000	2%
Magnesium, total	mg/L	0.2000	6.6000	6.5000	6.6000	6.5000	0.1000	2%
Manganese, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Manganese, total	mg/L	0.0005	0.0061	0.0042	0.0061	0.0042	0.0019	37%
Mercury, dissolved	ng/L	0.2000	<0.2	<0.2	0.1414	0.1414	0.0000	0%
Mercury, total	ng/L	0.2000	0.5000	0.2000	0.5000	0.2000	0.3000	86%
Molybdenum, dissolved	mg/L	0.0005	0.0029	0.0029	0.0029	0.0029	0.0000	0%
Molybdenum, total	mg/L	0.0005	0.0030	0.0030	0.0030	0.0030	0.0000	0%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	0.7800	0.8300	0.7800	0.8300	0.0500	6%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q1-2014			59760				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	<0.05	<0.05	0.0354	0.0354	0.0000	0%
pH	units	0.1000	8.2000	8.2000	8.2000	8.2000	0.0000	0%
pH measured at	C	0.1000	24.0000	24.0000	24.0000	24.0000	0.0000	0%
Phosphorus, total	mg/L	0.0100	0.0200	0.0200	0.0200	0.0200	0.0000	0%
Potassium, dissolved	mg/L	0.2000	7.2000	7.1000	7.2000	7.1000	0.1000	1%
Potassium, total	mg/L	0.2000	7.3000	7.2000	7.3000	7.2000	0.1000	1%
Residue, Filterable (TDS) @180C	mg/L	10.0000	280.0000	270.0000	280.0000	270.0000	10.0000	4%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	22.0000	13.0000	22.0000	13.0000	9.0000	51%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	0.0022	0.0019	0.0022	0.0019	0.0003	15%
Selenium, total	mg/L	0.0001	0.0018	0.0017	0.0018	0.0017	0.0001	6%
Silver, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	0.0001	0.0000	0.0001	0.0000	34%
Sodium, dissolved	mg/L	0.2000	25.8000	25.3000	25.8000	25.3000	0.5000	2%
Sodium, total	mg/L	0.2000	25.7000	25.6000	25.7000	25.6000	0.1000	0%
Strontium, dissolved	mg/L	0.0050	0.2430	0.2460	0.2430	0.2460	0.0030	1%
Strontium, total	mg/L	0.0050	0.2500	0.2530	0.2500	0.2530	0.0030	1%
Sulfate	mg/L	0.5000	30.4000	29.6000	30.4000	29.6000	0.8000	3%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, total	mg/L	0.0001	<0.0001	0.0001	0.0001	0.0001	0.0000	34%
Titanium, dissolved	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Titanium, total	mg/L	0.0050	0.0050	<0.005	0.0050	0.0035	0.0015	34%
Total Alkalinity	mg/L	2.0000	132.0000	116.0000	132.0000	116.0000	16.0000	13%
Uranium, dissolved	mg/L	0.0001	0.0025	0.0025	0.0025	0.0025	0.0000	0%
Uranium, total	mg/L	0.0001	0.0030	0.0029	0.0030	0.0029	0.0001	3%
Vanadium, dissolved	mg/L	0.0002	0.0157	0.0115	0.0157	0.0115	0.0042	31%
Vanadium, total	mg/L	0.0002	0.0155	0.0156	0.0155	0.0156	0.0001	1%
Zinc, dissolved	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%
Zinc, total	mg/L	0.0100	0.0100	0.0100	0.0100	0.0100	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q1-2014			Deposit Stock Tank				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Aluminum, total	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Arsenic, dissolved	mg/L	0.0002	0.0301	0.0299	0.0301	0.0299	0.0002	1%
Arsenic, total	mg/L	0.0002	0.0257	0.0252	0.0257	0.0252	0.0005	2%
Barium, dissolved	mg/L	0.0030	0.0490	0.0390	0.0490	0.0390	0.0100	23%
Barium, total	mg/L	0.0030	0.0510	0.0500	0.0510	0.0500	0.0010	2%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Bicarbonate as CaCO3	mg/L	2.0000	178.0000	166.0000	178.0000	166.0000	12.0000	7%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Boron, dissolved	mg/L	0.0100	0.0700	0.0500	0.0700	0.0500	0.0200	33%
Boron, total	mg/L	0.0100	0.0700	0.0700	0.0700	0.0700	0.0000	0%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	53.6000	42.6000	53.6000	42.6000	11.0000	23%
Calcium, total	mg/L	0.1000	55.7000	54.6000	55.7000	54.6000	1.1000	2%
Carbonate as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Chloride	mg/L	0.5000	16.9000	16.9000	16.9000	16.9000	0.0000	0%
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Chromium, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cobalt, dissolved	mg/L	0.0001	0.0003	0.0002	0.0003	0.0002	0.0001	48%
Cobalt, total	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	9%
Conductivity @25C	umhos/cm	1.0000	519.0000	513.0000	519.0000	513.0000	6.0000	1%
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.1000	0.4400	0.4500	0.4400	0.4500	0.0100	2%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	1.0000	182.0000	145.0000	182.0000	145.0000	37.0000	23%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Iron, total	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lithium, dissolved	mg/L	0.0080	0.0400	0.0320	0.0400	0.0320	0.0080	22%
Lithium, total	mg/L	0.0080	0.0460	0.0440	0.0460	0.0440	0.0020	4%
Magnesium, dissolved	mg/L	0.2000	11.8000	9.3000	11.8000	9.3000	2.5000	24%
Magnesium, total	mg/L	0.2000	12.0000	11.8000	12.0000	11.8000	0.2000	2%
Manganese, dissolved	mg/L	0.0005	0.0033	0.0032	0.0033	0.0032	0.0001	3%
Manganese, total	mg/L	0.0005	0.0030	0.0030	0.0030	0.0030	0.0000	0%
Mercury, dissolved	<ND>	<ND>	<ND>	0.4000	<ND>	0.4000	0.0000	0%
Mercury, total	ng/L	0.2000	0.9000	1.0000	0.9000	1.0000	0.1000	11%
Molybdenum, dissolved	mg/L	0.0005	0.0035	0.0036	0.0035	0.0036	0.0001	3%
Molybdenum, total	mg/L	0.0005	0.0036	0.0035	0.0036	0.0035	0.0001	3%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	0.0700	0.0700	0.0700	0.0700	0.0000	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q1-2014			Deposit Stock Tank				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	<0.05	<0.05	0.0354	0.0354	0.0000	0%
pH	units	0.1000	8.2000	8.1000	8.2000	8.1000	0.1000	1%
pH measured at	C	0.1000	21.0000	21.0000	21.0000	21.0000	0.0000	0%
Phosphorus, total	mg/L	0.0100	0.0200	0.0200	0.0200	0.0200	0.0000	0%
Potassium, dissolved	mg/L	0.2000	4.3000	3.5000	4.3000	3.5000	0.8000	21%
Potassium, total	mg/L	0.2000	4.3000	4.2000	4.3000	4.2000	0.1000	2%
Residue, Filterable (TDS) @180C	mg/L	10.0000	340.0000	340.0000	340.0000	340.0000	0.0000	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	<5	<5	3.5355	3.5355	0.0000	0%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	0.0060	0.0059	0.0060	0.0059	0.0001	2%
Selenium, total	mg/L	0.0001	0.0051	0.0050	0.0051	0.0050	0.0001	2%
Silver, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Sodium, dissolved	mg/L	0.2000	35.2000	28.0000	35.2000	28.0000	7.2000	23%
Sodium, total	mg/L	0.2000	37.1000	36.1000	37.1000	36.1000	1.0000	3%
Strontium, dissolved	mg/L	0.0050	0.2510	0.1980	0.2510	0.1980	0.0530	24%
Strontium, total	mg/L	0.0050	0.2550	0.2500	0.2550	0.2500	0.0050	2%
Sulfate	mg/L	0.5000	47.0000	47.1000	47.0000	47.1000	0.1000	0%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Titanium, dissolved	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Titanium, total	mg/L	0.0050	0.0090	0.0090	0.0090	0.0090	0.0000	0%
Total Alkalinity	mg/L	2.0000	178.0000	166.0000	178.0000	166.0000	12.0000	7%
Uranium, dissolved	mg/L	0.0001	0.0046	0.0047	0.0046	0.0047	0.0001	2%
Uranium, total	mg/L	0.0001	0.0049	0.0048	0.0049	0.0048	0.0001	2%
Vanadium, dissolved	mg/L	0.0002	0.0332	0.0328	0.0332	0.0328	0.0004	1%
Vanadium, total	mg/L	0.0002	0.0309	0.0309	0.0309	0.0309	0.0000	0%
Zinc, dissolved	mg/L	0.0100	0.0100	<0.01	0.0100	0.0071	0.0029	34%
Zinc, total	mg/L	0.0100	0.0200	0.0200	0.0200	0.0200	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q1-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, dissolved	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, dissolved	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Bismuth, dissolved	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Boron, total	mg/L	0.0100	0.00707	0.01	0.01000	0.00	34%
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	1.00	1.00000	0.29	34%
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Gallium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	mg/L	1.0000	0.70711	<1	0.70711	0.00	0%
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, dissolved	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, dissolved	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	0.00	0.00080	0.00	77%
Mercury, dissolved	ng/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Mercury, total	ng/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	<10	7.07107	0.00	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%

Q1-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Scandium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Zinc, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q1-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	<1	0.70711	0.00	0%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	0.0006	0.00060	0.00	52%
Mercury, total	ng/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	<10	7.07107	0.00	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%

Q1-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q2-2014			PW-4				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	0.0500	0.0800	0.0500	0.0800	0.0300	46%
Aluminum, total	mg/L	0.0300	5.8200	3.9400	5.8200	3.9400	1.8800	39%
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Arsenic, dissolved	mg/L	0.0002	0.0131	0.0129	0.0131	0.0129	0.0002	2%
Arsenic, total	mg/L	0.0002	0.0160	0.0148	0.0160	0.0148	0.0012	8%
Barium, dissolved	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Barium, total	mg/L	0.0030	0.0140	0.0100	0.0140	0.0100	0.0040	33%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Beryllium, total	mg/L	0.0001	0.0003	0.0002	0.0003	0.0002	0.0001	25%
Bicarbonate as CaCO3	mg/L	2.0000	156.0000	157.0000	156.0000	157.0000	1.0000	1%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Boron, dissolved	mg/L	0.0100	0.1400	0.1400	0.1400	0.1400	0.0000	0%
Boron, total	mg/L	0.0100	0.1300	0.1200	0.1300	0.1200	0.0100	8%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	8.1000	8.2000	8.1000	8.2000	0.1000	1%
Calcium, total	mg/L	0.1000	11.4000	10.3000	11.4000	10.3000	1.1000	10%
Carbonate as CaCO3	mg/L	2.0000	12.0000	12.0000	12.0000	12.0000	0.0000	0%
Chloride	mg/L	2.5000	42.0000	48.6000	42.0000	48.6000	6.6000	15%
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Chromium, total	mg/L	0.0005	0.0006	<0.0005	0.0006	0.0004	0.0002	52%
Cobalt, dissolved	mg/L	0.0001	0.0003	0.0006	0.0003	0.0006	0.0003	68%
Cobalt, total	mg/L	0.0001	0.0003	0.0002	0.0003	0.0002	0.0001	27%
Conductivity @25C	umhos/cm	1.0000	840.0000	843.0000	840.0000	843.0000	3.0000	0%
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Copper, total	mg/L	0.0005	0.0012	0.0007	0.0012	0.0007	0.0005	53%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.2500	2.0500	2.4100	2.0500	2.4100	0.3600	16%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	0.8000	23.0000	23.0000	23.0000	23.0000	0.0000	0%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	0.1700	0.1900	0.1700	0.1900	0.0200	11%
Iron, total	mg/L	0.0200	5.9600	3.9800	5.9600	3.9800	1.9800	40%
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lead, total	mg/L	0.0001	0.0055	0.0043	0.0055	0.0043	0.0012	24%
Lithium, dissolved	mg/L	0.0080	0.0930	0.0930	0.0930	0.0930	0.0000	0%
Lithium, total	mg/L	0.0080	0.0950	0.0930	0.0950	0.0930	0.0020	2%
Magnesium, dissolved	mg/L	0.2000	0.6000	0.6000	0.6000	0.6000	0.0000	0%
Magnesium, total	mg/L	0.2000	1.5000	1.2000	1.5000	1.2000	0.3000	22%
Manganese, dissolved	mg/L	0.0005	0.0336	0.0333	0.0336	0.0333	0.0003	1%
Manganese, total	mg/L	0.0005	0.0602	0.0509	0.0602	0.0509	0.0093	17%
Mercury, dissolved	ng/L	0.2000	0.2000	<0.2	0.2000	0.1414	0.0586	34%
Mercury, total	ng/L	1.0000	8.0000	5.0000	8.0000	5.0000	3.0000	46%
Molybdenum, dissolved	mg/L	0.0005	0.0110	0.0112	0.0110	0.0112	0.0002	2%
Molybdenum, total	mg/L	0.0005	0.0109	0.0111	0.0109	0.0111	0.0002	2%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	0.0007	<0.0006	0.0007	0.0004	0.0003	49%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q2-2014			PW-4				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	0.1500	0.1200	0.1500	0.1200	0.0300	22%
pH	units	0.1000	8.6000	8.7000	8.6000	8.7000	0.1000	1%
pH measured at	C	0.1000	22.0000	22.0000	22.0000	22.0000	0.0000	0%
Phosphorus, total	mg/L	0.0100	0.0500	0.0300	0.0500	0.0300	0.0200	50%
Potassium, dissolved	mg/L	0.2000	1.1000	1.1000	1.1000	1.1000	0.0000	0%
Potassium, total	mg/L	0.2000	1.2000	1.1000	1.2000	1.1000	0.1000	9%
Residue, Filterable (TDS) @180C	mg/L	10.0000	510.0000	500.0000	510.0000	500.0000	10.0000	2%
Residue, Non-Filterable (TSS) @105C	mg/L	10.0000	200.0000	135.0000	200.0000	135.0000	65.0000	39%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Selenium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Silver, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Sodium, dissolved	mg/L	0.2000	175.0000	175.0000	175.0000	175.0000	0.0000	0%
Sodium, total	mg/L	0.2000	177.0000	172.0000	177.0000	172.0000	5.0000	3%
Strontium, dissolved	mg/L	0.0050	0.0360	0.0360	0.0360	0.0360	0.0000	0%
Strontium, total	mg/L	0.0050	0.0560	0.0480	0.0560	0.0480	0.0080	15%
Sulfate	mg/L	2.5000	142.0000	168.0000	142.0000	168.0000	26.0000	17%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, total	mg/L	0.0001	0.0003	0.0003	0.0003	0.0003	0.0000	0%
Titanium, dissolved	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Titanium, total	mg/L	0.0050	0.0260	0.0190	0.0260	0.0190	0.0070	31%
Total Alkalinity	mg/L	2.0000	169.0000	169.0000	169.0000	169.0000	0.0000	0%
Uranium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Uranium, total	mg/L	0.0001	0.0019	0.0013	0.0019	0.0013	0.0006	38%
Vanadium, dissolved	mg/L	0.0002	<0.0002	<0.0002	0.0001	0.0001	0.0000	0%
Vanadium, total	mg/L	0.0002	0.0009	0.0007	0.0009	0.0007	0.0002	25%
Zinc, dissolved	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%
Zinc, total	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q2-2014			Twin Springs South				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Aluminum, total	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Arsenic, dissolved	mg/L	0.0002	0.0380	0.0394	0.0380	0.0394	0.0014	4%
Arsenic, total	mg/L	0.0002	0.0409	0.0409	0.0409	0.0409	0.0000	0%
Barium, dissolved	mg/L	0.0030	0.0050	0.0050	0.0050	0.0050	0.0000	0%
Barium, total	mg/L	0.0030	0.0040	0.0030	0.0040	0.0030	0.0010	29%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.0003	0.0000	0.0002	0.0002	143%
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Bicarbonate as CaCO3	mg/L	2.0000	132.0000	133.0000	132.0000	133.0000	1.0000	1%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Boron, dissolved	mg/L	0.0100	0.1100	0.1200	0.1100	0.1200	0.0100	9%
Boron, total	mg/L	0.0100	0.0900	0.0900	0.0900	0.0900	0.0000	0%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	26.8000	26.9000	26.8000	26.9000	0.1000	0%
Calcium, total	mg/L	0.1000	27.3000	26.7000	27.3000	26.7000	0.6000	2%
Carbonate as CaCO3	mg/L	2.0000	3.0000	<2	3.0000	1.4142	1.5858	72%
Chloride	mg/L	0.5000	10.5000	10.6000	10.5000	10.6000	0.1000	1%
Chromium, dissolved	mg/L	0.0005	0.0008	0.0008	0.0008	0.0008	0.0000	0%
Chromium, total	mg/L	0.0005	0.0009	0.0010	0.0009	0.0010	0.0001	11%
Cobalt, dissolved	mg/L	0.0001	0.0003	0.0001	0.0003	0.0001	0.0002	86%
Cobalt, total	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	13%
Conductivity @25C	umhos/cm	1.0000	456.0000	454.0000	456.0000	454.0000	2.0000	0%
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.0500	0.6200	0.6300	0.6200	0.6300	0.0100	2%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	0.8000	129.0000	129.0000	129.0000	129.0000	0.0000	0%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Iron, total	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lithium, dissolved	mg/L	0.0080	0.0130	0.0130	0.0130	0.0130	0.0000	0%
Lithium, total	mg/L	0.0080	0.0130	0.0130	0.0130	0.0130	0.0000	0%
Magnesium, dissolved	mg/L	0.2000	15.0000	15.0000	15.0000	15.0000	0.0000	0%
Magnesium, total	mg/L	0.2000	15.2000	14.9000	15.2000	14.9000	0.3000	2%
Manganese, dissolved	mg/L	0.0005	0.0018	0.0015	0.0018	0.0015	0.0003	18%
Manganese, total	mg/L	0.0005	0.0043	0.0024	0.0043	0.0024	0.0019	57%
Mercury, dissolved	ng/L	0.2000	<0.2	<0.2	0.1414	0.1414	0.0000	0%
Mercury, total	ng/L	0.2000	<0.2	<0.2	0.1414	0.1414	0.0000	0%
Molybdenum, dissolved	mg/L	0.0030	0.0090	0.0090	0.0090	0.0090	0.0000	0%
Molybdenum, total	mg/L	0.0005	0.0093	0.0090	0.0093	0.0090	0.0003	3%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	1.9200	1.9300	1.9200	1.9300	0.0100	1%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q2-2014			Twin Springs South				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	<0.05	<0.05	0.0354	0.0354	0.0000	0%
pH	units	0.1000	8.3000	8.3000	8.3000	8.3000	0.0000	0%
pH measured at	C	0.1000	23.0000	22.0000	23.0000	22.0000	1.0000	4%
Phosphorus, total	mg/L	0.0100	0.0200	0.0200	0.0200	0.0200	0.0000	0%
Potassium, dissolved	mg/L	0.2000	9.0000	9.0000	9.0000	9.0000	0.0000	0%
Potassium, total	mg/L	0.2000	9.0000	8.8000	9.0000	8.8000	0.2000	2%
Residue, Filterable (TDS) @180C	mg/L	10.0000	300.0000	300.0000	300.0000	300.0000	0.0000	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	<5	<5	3.5355	3.5355	0.0000	0%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	0.0046	0.0046	0.0046	0.0046	0.0000	0%
Selenium, total	mg/L	0.0001	0.0042	0.0042	0.0042	0.0042	0.0000	0%
Silver, dissolved	mg/L	0.0003	<0.0003	<0.0003	0.0002	0.0002	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Sodium, dissolved	mg/L	0.2000	42.7000	42.8000	42.7000	42.8000	0.1000	0%
Sodium, total	mg/L	0.2000	43.2000	42.2000	43.2000	42.2000	1.0000	2%
Strontium, dissolved	mg/L	0.0050	0.1500	0.1500	0.1500	0.1500	0.0000	0%
Strontium, total	mg/L	0.0050	0.1510	0.1470	0.1510	0.1470	0.0040	3%
Sulfate	mg/L	0.5000	44.0000	43.9000	44.0000	43.9000	0.1000	0%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Titanium, dissolved	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Titanium, total	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Total Alkalinity	mg/L	2.0000	135.0000	135.0000	135.0000	135.0000	0.0000	0%
Uranium, dissolved	mg/L	0.0001	0.0028	0.0032	0.0028	0.0032	0.0004	13%
Uranium, total	mg/L	0.0001	0.0032	0.0032	0.0032	0.0032	0.0000	0%
Vanadium, dissolved	mg/L	0.0002	0.0416	0.0419	0.0416	0.0419	0.0003	1%
Vanadium, total	mg/L	0.0002	0.0441	0.0449	0.0441	0.0449	0.0008	2%
Zinc, dissolved	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%
Zinc, total	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q2-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, dissolved	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, dissolved	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Bismuth, dissolved	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Boron, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	1.00	1.00000	0.29	34%
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Gallium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	mg/L	0.8000	0.56569	<0.8	0.56569	0.00	0%
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, dissolved	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, dissolved	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Mercury, dissolved	ng/L	0.2000	0.14142	0.20	0.20000	0.06	34%
Mercury, total	ng/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	<10	7.07107	0.00	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%

Q2-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Scandium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	0.00	0.00030	0.00	72%
Zinc, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q2-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	1.00	1.00000	0.29	34%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Mercury, total	ng/L	0.2000	0.14142	0.20	0.20000	0.06	34%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	<10	7.07107	0.00	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%

Q2-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	0.0002	0.00020	0.00	34%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q3-2014			59763				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	0.0300	0.0300	0.0300	0.0300	0.0000	0%
Aluminum, total	mg/L	0.0300	0.0900	0.1200	0.0900	0.1200	0.0300	29%
Antimony, dissolved	mg/L	0.0004	0.0005	0.0005	0.0005	0.0005	0.0000	0%
Antimony, total	mg/L	0.0004	0.0006	0.0006	0.0006	0.0006	0.0000	0%
Arsenic, dissolved	mg/L	0.0002	0.0621	0.0660	0.0621	0.0660	0.0039	6%
Arsenic, total	mg/L	0.0002	0.0664	0.0669	0.0664	0.0669	0.0005	1%
Barium, dissolved	mg/L	0.0030	0.0260	0.0260	0.0260	0.0260	0.0000	0%
Barium, total	mg/L	0.0030	0.0230	0.0230	0.0230	0.0230	0.0000	0%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Bicarbonate as CaCO3	mg/L	2.0000	203.0000	210.0000	203.0000	210.0000	7.0000	3%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	0.0400	0.0283	0.0400	0.0117	34%
Boron, dissolved	mg/L	0.0100	0.1700	0.1700	0.1700	0.1700	0.0000	0%
Boron, total	mg/L	0.0100	0.1700	0.1700	0.1700	0.1700	0.0000	0%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	54.3000	54.4000	54.3000	54.4000	0.1000	0%
Calcium, total	mg/L	0.1000	55.6000	54.7000	55.6000	54.7000	0.9000	2%
Carbonate as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Chloride	mg/L	5.0000	18.2000	12.1000	18.2000	12.1000	6.1000	40%
Chromium, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Chromium, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cobalt, dissolved	mg/L	0.00005	0.00025	0.00031	0.00025	0.00031	0.00006	21%
Cobalt, total	mg/L	0.0001	0.0003	0.0003	0.0003	0.0003	0.0000	0%
Conductivity @25C	umhos/cm	1.0000	1710.0000	1700.0000	1710.0000	1700.0000	10.0000	1%
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.5000	0.9200	0.6600	0.9200	0.6600	0.2600	33%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	0.8000	161.0000	161.0000	161.0000	161.0000	0.0000	0%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Iron, total	mg/L	0.0200	0.0800	0.1100	0.0800	0.1100	0.0300	32%
Lead, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lead, total	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0%
Lithium, dissolved	mg/L	0.0080	0.2010	0.2030	0.2010	0.2030	0.0020	1%
Lithium, total	mg/L	0.0080	0.1980	0.1960	0.1980	0.1960	0.0020	1%
Magnesium, dissolved	mg/L	0.2000	6.1000	6.1000	6.1000	6.1000	0.0000	0%
Magnesium, total	mg/L	0.2000	6.3000	6.2000	6.3000	6.2000	0.1000	2%
Manganese, dissolved	mg/L	0.0005	0.0867	0.0857	0.0867	0.0857	0.0010	1%
Manganese, total	mg/L	0.0005	0.0997	0.0992	0.0997	0.0992	0.0005	1%
Mercury, dissolved	ng/L	0.2000	0.2000	0.2000	0.2000	0.2000	0.0000	0%
Mercury, total	ng/L	0.2000	0.8000	0.8000	0.8000	0.8000	0.0000	0%
Molybdenum, dissolved	mg/L	0.0005	0.0113	0.0118	0.0113	0.0118	0.0005	4%
Molybdenum, total	mg/L	0.0005	0.0115	0.0116	0.0115	0.0116	0.0001	1%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q3-2014			59763				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	<0.05	<0.05	0.0354	0.0354	0.0000	0%
pH	units	0.1000	8.2000	8.2000	8.2000	8.2000	0.0000	0%
pH measured at	C	0.1000	19.6000	19.5000	19.6000	19.5000	0.1000	1%
Phosphorus, total	mg/L	0.0100	0.0400	0.0400	0.0400	0.0400	0.0000	0%
Potassium, dissolved	mg/L	0.2000	25.9000	26.0000	25.9000	26.0000	0.1000	0%
Potassium, total	mg/L	0.2000	26.3000	26.0000	26.3000	26.0000	0.3000	1%
Residue, Filterable (TDS) @180C	mg/L	10.0000	1160.0000	1170.0000	1160.0000	1170.0000	10.0000	1%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	6.0000	<5	6.0000	3.5355	2.4645	52%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	0.0004	0.0004	0.0004	0.0004	0.0000	0%
Selenium, total	mg/L	0.0001	0.0008	0.0005	0.0008	0.0005	0.0003	46%
Silver, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Sodium, dissolved	mg/L	0.2000	292.0000	291.0000	292.0000	291.0000	1.0000	0%
Sodium, total	mg/L	0.2000	292.0000	289.0000	292.0000	289.0000	3.0000	1%
Strontium, dissolved	mg/L	0.0050	0.1790	0.1790	0.1790	0.1790	0.0000	0%
Strontium, total	mg/L	0.0050	0.1730	0.1710	0.1730	0.1710	0.0020	1%
Sulfate	mg/L	5.0000	582.0000	377.0000	582.0000	377.0000	205.0000	43%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	0.0002	<0.0001	0.0002	0.0001	0.0001	96%
Tin, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, total	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0%
Titanium, dissolved	mg/L	0.0050	<0.005	0.0050	0.0035	0.0050	0.0015	34%
Titanium, total	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Total Alkalinity	mg/L	2.0000	203.0000	210.0000	203.0000	210.0000	7.0000	3%
Uranium, dissolved	mg/L	0.0001	0.0020	0.0022	0.0020	0.0022	0.0002	10%
Uranium, total	mg/L	0.0001	0.0020	0.0021	0.0020	0.0021	0.0001	5%
Vanadium, dissolved	mg/L	0.0002	0.0017	0.0018	0.0017	0.0018	0.0001	6%
Vanadium, total	mg/L	0.0002	0.0025	0.0026	0.0025	0.0026	0.0001	4%
Zinc, dissolved	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%
Zinc, total	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q3-2014			Government Corral Spring				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Aluminum, dissolved	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Aluminum, total	mg/L	0.0300	<0.03	<0.03	0.0212	0.0212	0.0000	0%
Antimony, dissolved	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Antimony, total	mg/L	0.0004	<0.0004	<0.0004	0.0003	0.0003	0.0000	0%
Arsenic, dissolved	mg/L	0.0002	0.0075	0.0075	0.0075	0.0075	0.0000	0%
Arsenic, total	mg/L	0.0002	0.0075	0.0076	0.0075	0.0076	0.0001	1%
Barium, dissolved	mg/L	0.0030	0.0240	0.0240	0.0240	0.0240	0.0000	0%
Barium, total	mg/L	0.0030	0.0260	0.0250	0.0260	0.0250	0.0010	4%
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Bicarbonate as CaCO3	mg/L	2.0000	182.0000	180.0000	182.0000	180.0000	2.0000	1%
Bismuth, dissolved	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Bismuth, total	mg/L	0.0400	<0.04	<0.04	0.0283	0.0283	0.0000	0%
Boron, dissolved	mg/L	0.0100	0.0500	0.0600	0.0500	0.0600	0.0100	18%
Boron, total	mg/L	0.0100	0.0500	0.0500	0.0500	0.0500	0.0000	0%
Cadmium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Cadmium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Calcium, dissolved	mg/L	0.1000	48.0000	48.4000	48.0000	48.4000	0.4000	1%
Calcium, total	mg/L	0.1000	52.0000	51.2000	52.0000	51.2000	0.8000	2%
Carbonate as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Chloride	mg/L	0.5000	12.7000	12.7000	12.7000	12.7000	0.0000	0%
Chromium, dissolved	mg/L	0.0005	0.0011	0.0011	0.0011	0.0011	0.0000	0%
Chromium, total	mg/L	0.0005	0.0012	0.0013	0.0012	0.0013	0.0001	8%
Cobalt, dissolved	mg/L	0.0001	0.0002	0.0004	0.0002	0.0004	0.0002	65%
Cobalt, total	mg/L	0.0001	0.0002	0.0002	0.0002	0.0002	0.0000	5%
Conductivity @25C	umhos/cm	1.0000	424.0000	440.0000	424.0000	440.0000	16.0000	4%
Copper, dissolved	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Copper, total	mg/L	0.0005	<0.0005	<0.0005	0.0004	0.0004	0.0000	0%
Cyanide, total	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Cyanide, WAD	mg/L	0.0030	<0.003	<0.003	0.0021	0.0021	0.0000	0%
Fluoride	mg/L	0.0500	0.4100	0.4100	0.4100	0.4100	0.0000	0%
Gallium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Gallium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Hardness as CaCO3	mg/L	0.8000	179.0000	181.0000	179.0000	181.0000	2.0000	1%
Hydroxide as CaCO3	mg/L	2.0000	<2	<2	1.4142	1.4142	0.0000	0%
Iron, dissolved	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Iron, total	mg/L	0.0200	<0.02	<0.02	0.0141	0.0141	0.0000	0%
Lead, dissolved	mg/L	0.0001	0.0001	<0.0001	0.0001	0.0001	0.0000	34%
Lead, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Lithium, dissolved	mg/L	0.0080	0.0170	0.0170	0.0170	0.0170	0.0000	0%
Lithium, total	mg/L	0.0080	0.0200	0.0200	0.0200	0.0200	0.0000	0%
Magnesium, dissolved	mg/L	0.2000	14.4000	14.6000	14.4000	14.6000	0.2000	1%
Magnesium, total	mg/L	0.2000	16.2000	16.0000	16.2000	16.0000	0.2000	1%
Manganese, dissolved	mg/L	0.0005	<0.0005	0.0005	0.0004	0.0005	0.0001	34%
Manganese, total	mg/L	0.0005	0.0010	0.0007	0.0010	0.0007	0.0003	35%
Mercury, dissolved	ng/L	0.2000	1.0000	1.0000	1.0000	1.0000	0.0000	0%
Mercury, total	ng/L	0.2000	0.2000	0.2000	0.2000	0.2000	0.0000	0%
Molybdenum, dissolved	mg/L	0.0005	0.0018	0.0019	0.0018	0.0019	0.0001	5%
Molybdenum, total	mg/L	0.0005	0.0019	0.0019	0.0019	0.0019	0.0000	0%
Nickel, dissolved	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nickel, total	mg/L	0.0006	<0.0006	<0.0006	0.0004	0.0004	0.0000	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	2.5100	2.5100	2.5100	2.5100	0.0000	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>

Q3-2014			Government Corral Spring				Difference[2]	RPD[3] (%)
PARAMETER	UNITS	MDL	SAMPLE	DUPLICATE	SAMPLE[1]	DUPLICATE[1]		
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	<0.05	<0.05	0.0354	0.0354	0.0000	0%
pH	units	0.1000	8.2000	8.2000	8.2000	8.2000	0.0000	0%
pH measured at	C	0.1000	20.7000	20.7000	20.7000	20.7000	0.0000	0%
Phosphorus, total	mg/L	0.0100	0.0200	0.0200	0.0200	0.0200	0.0000	0%
Potassium, dissolved	mg/L	0.2000	4.4000	4.5000	4.4000	4.5000	0.1000	2%
Potassium, total	mg/L	0.2000	4.7000	4.6000	4.7000	4.6000	0.1000	2%
Residue, Filterable (TDS) @180C	mg/L	10.0000	300.0000	300.0000	300.0000	300.0000	0.0000	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	<5	<5	3.5355	3.5355	0.0000	0%
Scandium, dissolved	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Scandium, total	mg/L	0.1000	<0.1	<0.1	0.0707	0.0707	0.0000	0%
Selenium, dissolved	mg/L	0.0001	0.0016	0.0017	0.0016	0.0017	0.0001	6%
Selenium, total	mg/L	0.0001	0.0015	0.0017	0.0015	0.0017	0.0002	13%
Silver, dissolved	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Silver, total	mg/L	0.0001	<0.00005	<0.00005	0.0000	0.0000	0.0000	0%
Sodium, dissolved	mg/L	0.2000	18.7000	18.9000	18.7000	18.9000	0.2000	1%
Sodium, total	mg/L	0.2000	19.9000	19.5000	19.9000	19.5000	0.4000	2%
Strontium, dissolved	mg/L	0.0050	0.2430	0.2460	0.2430	0.2460	0.0030	1%
Strontium, total	mg/L	0.0050	0.2640	0.2590	0.2640	0.2590	0.0050	2%
Sulfate	mg/L	0.5000	22.6000	22.6000	22.6000	22.6000	0.0000	0%
Thallium, dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Thallium, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Tin, dissolved	mg/L	0.0001	<0.0001	0.0002	0.0001	0.0002	0.0001	96%
Tin, total	mg/L	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0000	0%
Titanium, dissolved	mg/L	0.0050	<0.005	<0.005	0.0035	0.0035	0.0000	0%
Titanium, total	mg/L	0.0050	0.0090	0.0080	0.0090	0.0080	0.0010	12%
Total Alkalinity	mg/L	2.0000	182.0000	180.0000	182.0000	180.0000	2.0000	1%
Uranium, dissolved	mg/L	0.0001	0.0018	0.0018	0.0018	0.0018	0.0000	0%
Uranium, total	mg/L	0.0001	0.0019	0.0019	0.0019	0.0019	0.0000	0%
Vanadium, dissolved	mg/L	0.0002	0.0207	0.0210	0.0207	0.0210	0.0003	1%
Vanadium, total	mg/L	0.0002	0.0221	0.0224	0.0221	0.0224	0.0003	1%
Zinc, dissolved	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%
Zinc, total	mg/L	0.0100	<0.01	<0.01	0.0071	0.0071	0.0000	0%

[1]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[2]Arithmetic difference between sample and duplicate

[3]RPD compares sample and duplicate, red values are greater than or equal to 20% and the sample and/or duplicate results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference

Q3-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, dissolved	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, dissolved	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, dissolved	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Bismuth, dissolved	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Boron, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Cadmium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, dissolved	mg/L	0.1000	0.07071	0.10	0.10000	0.03	34%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	1.40	1.40000	0.69	66%
Copper, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Gallium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	mg/L	0.8000	0.56569	1.50	1.50000	0.93	90%
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, dissolved	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, dissolved	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, dissolved	mg/L	0.2000	0.14142	0.30	0.30000	0.16	72%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Mercury, dissolved	ng/L	0.2000	0.14142	0.20	0.20000	0.06	34%
Mercury, total	ng/L	0.2000	0.14142	0.30	0.30000	0.16	72%
Molybdenum, dissolved	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, dissolved	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, dissolved	mg/L	0.2000	0.14142	0.20	0.20000	0.06	34%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	<10	7.07107	0.00	0%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%

Q3-2014			DI WATER	EQUIPMENT		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Scandium, dissolved	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, dissolved	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, dissolved	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, dissolved	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Uranium, dissolved	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, dissolved	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	0.00	0.00060	0.00	124%
Zinc, dissolved	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Q3-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Aluminum, total	mg/L	0.0300	0.02121	<0.03	0.02121	0.00	0%
Antimony, total	mg/L	0.0004	0.00028	<0.0004	0.00028	0.00	0%
Arsenic, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Barium, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Beryllium, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Bicarbonate as CaCO3	mg/L	2.0000	1.41421	9.20	9.20000	7.79	147%
Bismuth, total	mg/L	0.0400	0.02828	<0.04	0.02828	0.00	0%
Boron, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Cadmium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Calcium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Carbonate as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Chloride	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Chromium, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cobalt, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Conductivity @25C	umhos/cm	1.0000	0.70711	1.10	1.10000	0.39	43%
Copper, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Cyanide, total	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Cyanide, WAD	mg/L	0.0030	0.00212	<0.003	0.00212	0.00	0%
Fluoride	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Gallium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Hardness as CaCO3	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Hydroxide as CaCO3	mg/L	2.0000	1.41421	<2	1.41421	0.00	0%
Iron, total	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Lead, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Lithium, total	mg/L	0.0080	0.00566	<0.008	0.00566	0.00	0%
Magnesium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Manganese, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Mercury, total	ng/L	0.2000	0.14142	0.70	0.70000	0.56	133%
Molybdenum, total	mg/L	0.0005	0.00035	<0.0005	0.00035	0.00	0%
Nickel, total	mg/L	0.0006	0.00042	<0.0006	0.00042	0.00	0%
Nitrate as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrate/Nitrite as N	mg/L	0.0200	0.01414	<0.02	0.01414	0.00	0%
Nitrate/Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrite as N, dissolved	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>	<ND>
Nitrogen, ammonia	mg/L	0.0500	0.03536	<0.05	0.03536	0.00	0%
Phosphorus, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%
Potassium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Residue, Filterable (TDS) @180C	mg/L	10.0000	7.07107	10.00	10.00000	2.93	34%
Residue, Non-Filterable (TSS) @105C	mg/L	5.0000	3.53553	<5	3.53553	0.00	0%
Scandium, total	mg/L	0.1000	0.07071	<0.1	0.07071	0.00	0%
Selenium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Silver, total	mg/L	0.0001	0.00004	<0.00005	0.00004	0.00	0%
Sodium, total	mg/L	0.2000	0.14142	<0.2	0.14142	0.00	0%
Strontium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%

Q3-2014			DI WATER	TRANSFER		Difference[3]	RPD[4] (%)
PARAMETER	UNITS	MDL	ESTIMATED[1]	BLANK	BLANK[2]		
Sulfate	mg/L	0.5000	0.35355	<0.5	0.35355	0.00	0%
Thallium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Tin, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Titanium, total	mg/L	0.0050	0.00354	<0.005	0.00354	0.00	0%
Total Alkalinity	mg/L	2.0000	1.41421	9.20	9.20000	7.79	147%
Uranium, total	mg/L	0.0001	0.00007	<0.0001	0.00007	0.00	0%
Vanadium, total	mg/L	0.0002	0.00014	<0.0002	0.00014	0.00	0%
Zinc, total	mg/L	0.0100	0.00707	<0.01	0.00707	0.00	0%

[1]DI water assumed to have values below laboratory minimum detection limit; estimated values were generated by dividing the MDL by √2

[2]Reported values below detection levels were substituted with estimated values for calculation purposes; estimated values were generated by dividing the MDL by √2

[3]Arithmetic difference between estimated DI water value and blank value

[4]RPD compares blank value and estimated DI water value, red values are greater than or equal to 20% and the blank results are greater than 5 times the MDL

Note:
MDL = Minimum Detection Level
RL = Reporting Level (equals 5*MDL)
ND = No Data
RPD = Relative Percent Difference
NA = Not Applicable

Appendix J
Compiled Field Forms and Calibration Sheets

Q2 2012

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: Terry Scanlan, Erik Bae

Date: 5/31/12

GPS Coord. (UTM 11N, NAD83)

SPF Sounder #: SPF WL1000-01

Northing: 4935644

Sounder Correction: _____

Easting: 0471460

Well Description

Pump Description

Surface Casing Diam (in): 12

Permanent: _____ Temporary: X

Well Casing Diam (in): 4

Type: Grundfos 3"

Surface Casing Height AGL (ft): 3.3'

Capacity (gpm): _____ HP: 1.5

WL Meas Point Desc: 3.5 Top of 4" PVC coupler

Setting Depth (ft): 120 Ft

Meas Total Depth [ft, BMP]: 155 Ft

Drop Pipe Diam (in): 1.25"

Locked? Y X N _____

Notes: _____

Well Condition: No change

Water Quality

Casing Purge

Sample Time: 16:10

3x Casing Volume (gal): 189

Field Filtered? Y X N _____

Flow Rate (gpm): 19

Blank Set Collected? Y _____ N X

Required Purge Time (min): 10 min

Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
15:22		55.48						static WL
15:53								on
15:56		72.90	15					
16:02				7.63	329.0	392.0	16.6	
16:03		74.55						
16:07				7.69	329.3	392.2	16.5	
16:10								Sample
16:15								Finish
16:16		74.95		7.73	329.1	392.3	16.6	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

photos 111

Date: 5-30-12

GPS Coord. (UTM 11N, NAD83)

SPF Sounder #: SPF WL1000-01

Northing: 470557

Sounder Correction: _____

Easting: 4838740 WP 5

Well Description

Pump Description

Surface Casing Diam (in): 8" steel

Permanent: _____ Temporary: ✓

Well Casing Diam (in): 4" PVC

Type: Grundfos 3"

Surface Casing Height AGL (ft): 2.52'

Capacity (gpm): _____ HP: 1.5

WL Meas Point Desc: top of surf casing

Setting Depth (ft): 280'

Meas Total Depth [ft, BMP]: ~340' 370' const

Drop Pipe Diam (in): 1¼ PVC

Locked? Y ✓ N _____

Notes: provided by Hydrell Pumps

Well Condition: good

Water Quality

Casing Purge

Sample Time: 14:05

3x Casing Volume (gal): 570 scl ,66 gal/ft

Field Filtered? Y ✓ N _____ not pH, cond, turb, bact

Flow Rate (gpm): 20

travel blank

Blank Set Collected? Y ✓ N _____

Required Purge Time (min): 30 min

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
13:00		83.45						SWL
13:34			20 (14.8)					pump on
13:39		91.84						slightly milky - no odor
13:45				8.64	.562 mS	.656 mS	17.5	slightly milky - no odor
13:52		92.82						
13:55			20 (14.9)	8.69	.562 mS	.657 mS	17.4	
13:59		93.00						
14:00				8.67	.567 mS	.663 mS	17.4	"
14:05				8.67	.565 mS	.663 mS	17.3	" collect samples
14:14		93.44						
14:15								off

end 14:04

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Personnel: Erik Bore

Date: 6/1/12

SPF Sounder #: —

Sounder Correction: —

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4837684

Easting: 0470904

Well Description

Surface Casing Diam (in): 10"

Well Casing Diam (in): —

Surface Casing Height AGL (ft): 2.5'

WL Meas Point Desc: —

Meas Total Depth [ft, BMP]: — Artesian

Locked? Y _____ N _____

Well Condition: flowing

Pump Description Artesian

Permanent: X Temporary: _____

Type: unknown

Capacity (gpm): _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: Permanent pump installed

Casing Purge

3x Casing Volume (gal): —

Flow Rate (gpm): 1L/10sec * 1.6 gpm

Required Purge Time (min): —

Water Quality

Sample Time: 17:10

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

*

Sampler Signature: [signature]

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
17:10								Sampled – Field Filtered
								w/ 0.45µ hi-cap filter
								and bike pump chamber.
17:15			1L/10sec	[illegible]				= 0.1 L/sec
17:25				8.02	520	595	18.5	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: Erik Boe

Date: 6/1/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 0471431

Well Description

Surface Casing Diam (in): 6"

Well Casing Diam (in): 6"

Surface Casing Height AGL (ft): 3.3

WL Meas Point Desc: Top of Casing

Meas Total Depth [ft, BMP]: 324

Locked? Y _____ N X

Well Condition: NC

Pump Description

Permanent: _____ Temporary: X

Type: Grundfos 3"

Capacity (gpm): _____ HP: 1.5

Setting Depth (ft): 280

Drop Pipe Diam (in): 1.25

Notes: Leaving in well for future use.

Casing Purge

3x Casing Volume (gal): 2143

Flow Rate (gpm): 30

Required Purge Time (min): 71

Water Quality

Sample Time: 11:00

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

	Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
5/31/12	1540		55.26						5-31-12
6/1/12	843		55.36						
	9:44	0		33					Pump on (5 gal / 9 sec
	9:55		127.25						
	9:57			33					clean, clear water w/ Fe hue.
	9:58		130.62						
	10:02		136.59						
	10:10		142.95						
	10:26		154.37	30					
	10:33				8.13	260	294	19.0	
	10:38				8.10	262	296	18.9	
	10:50		162.48						
	11:00								Samples completed
	11:01		164.20		8.09	267	304	18.8	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 5-30-12
SPF Sounder #: SPF WL1000-01
Sounder Correction: _____

Page No.: _____ of _____
photos 1111
GPS Coord. (UTM 11N, NAD83)
Northing: 4705338
Easting: 4838778 WP 3

Well Description
Surface Casing Diam (in): 10"
Well Casing Diam (in): 6"
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of 6" (3')
Meas Total Depth [ft, BMP]: ~365' (last 375')
Locked? Y ✓ N _____
Well Condition: good - cool pad .156

Casing Purge 1.53 gal/ft
3x Casing Volume (gal): 1854 gal
Flow Rate (gpm): 20 gpm (15 sec) Travel
Required Purge Time (min): 68 min

Pump Description
Permanent: _____ Temporary: ✓ Cord Hysell
Type: 3" Grundfos
Capacity (gpm): _____ HP: 1.5
Setting Depth (ft): 260
Drop Pipe Diam (in): 1¼ PVC
Notes: provided by Hysell Pumps

Water Quality
Sample Time: 12:20
Field Filtered? Y ✓ N _____
Blank ~~Set Collected?~~ Y ✓ N _____ travel blank not opened
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
9:47		80.27						SWL
11:07			20 (14.55)					pump on blackish color
11:09								slight sulfur smell
11:12		94.46	20 (14.78)					blackish color / slight sulfur smell
11:30		95.73						milky color
11:45			20 (14.88)	8.35	0.760 mS	0.901 mS	16.9	
11:46		96.20						
12:00			20 (14.44)	8.38	.767 mS	0.905 mS	17.0	
12:06		96.52						milky sulfur smell
12:10				8.37	.773 mS	0.916 mS	16.9	
12:15				8.38	.773 mS	0.916 mS	16.9	
12:20				8.38	.771	0.916 mS	16.8	collect samples - did not filter turb, bact, pH, cond
12:33		96.70						~~pump off~~
12:34								pump off

end 12:20

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: Terry Scanlan, Erik Bol

Date: 5/31/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4835898

Easting: 0470406

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85 ft

WL Meas Point Desc: Top of casing

Meas Total Depth [ft, BMP]: 177 ft

Locked? Y _____ N X

Well Condition: No change

Pump Description

Permanent: _____ Temporary: X

Type: Grundfos 3"

Capacity (gpm): _____ HP: 1.5

Setting Depth (ft): 171

Drop Pipe Diam (in): 1.25"

Notes: _____

Casing Purge

3x Casing Volume (gal): 103

Flow Rate (gpm): 5

Required Purge Time (min): 21

Water Quality

Sample Time: 10:10

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
9:38		157.15						Static WL
9:40			5					Pump on, Q = 5 gpm
9:43		163.38						
9:54		164.03						clear, no sediment
9:55				7.91	858	1015	17.2	
10:05		163.22	5					
10:06				7.75	1066	1256	17.2	
10:11				7.70	1131	1329	17.2	
10:12					~~1301~~	~~1530~~		start sampling
10:22				7.59	1301	1530	17.3	finish "
10:25		163.10	5					

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: Erik Boe, Terry Scanlan

Date: 5/31/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 0471494

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.1

WL Meas Point Desc: Top of Casing

Meas Total Depth [ft, BMP]: NA, Perm pump installed.

Locked? Y _____ N X

Well Condition: No change.

Pump Description

Permanent: X Temporary: _____

Type: Unknown, perm pump installed.

Capacity (gpm): ~ HP: ~

Setting Depth (ft): ~

Drop Pipe Diam (in): ~

Notes: ~

Casing Purge

3x Casing Volume (gal): 307

Flow Rate (gpm): 9 ~~11.5~~ gpm

Required Purge Time (min): 35 min

Water Quality

Sample Time: 12:20

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

Time	Elapsed Time [min]	DTW [ft] (139.21)	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
11:37		89.21						
11:38								Pump on
11:41			16.5					Adj flow
11:43		117.40						
11:46		129.42						
11:50			9.0					
11:52				7.65	324	362	16.6	clear, no sed
11:53		166.86						
12:00		186.25						
12:05			2.5					
12:07		177.64		7.73	321	364	18.8	
12:15		170.52	4.5	7.73	314	355	19.1	
12:20			~~4.5~~	~~7.73~~	~~309~~	~~355~~	~~18.2~~	~~start sampling~~
12:25				7.73	309	355	18.2	stop "
12:28		170.25						

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: Terry Scanlan, Erik Roe

Date: 5/31/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: ~~4835287~~ 4835286

Easting: ~~0471531~~ 0471532

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.0 ft (0.42 = Δ top of steel & plastic)

WL Meas Point Desc: Top of Casing (Steel)

Meas Total Depth [ft, BMP]: 120 ft

Locked? Y _____ N X

Well Condition: _____

Pump Description

Permanent: _____ Temporary: X

Type: Grundfos 3"

Capacity (gpm): _____ HP: 1.5

Setting Depth (ft): 117

Drop Pipe Diam (in): 1.25 in

Notes: _____

Casing Purge

3x Casing Volume (gal): 55

Flow Rate (gpm): 4

Required Purge Time (min): 14 min

Water Quality

Sample Time: 14:50

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
13:50		89.45						Static
14:35								on
14:40		89.75	20.9					
14:43				7.60	323.0	379.8	17.0	
14:44		89.79						
14:46				7.67	315	380	16.1	clear water
14:50		89.82		7.70	315	380	16.1	sample
1453		89.79		7.72	313	379	16.0	finish

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 5-30-12

SPF Sounder #: SPF WL500-01

Sounder Correction:

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 469014

Easting: 4835105 WP 8

Well Description

Surface Casing Diam (in): 10" steel

Well Casing Diam (in): 6" PVC

Surface Casing Height AGL (ft): 2.92'

WL Meas Point Desc: top of surf casing

Meas Total Depth [ft, BMP]: ~320 const 322

Locked? Y ✓ N

Well Condition: cracked pad

Pump Description

Permanent: Temporary: ✓

Type: Grundfos 3"

Capacity (gpm): HP: 1.5

Setting Depth (ft): 320'

Drop Pipe Diam (in): 1.25

Notes: Hysell pump

Casing Purge

3x Casing Volume (gal): 180 gal 1.39 gal/ft

Flow Rate (gpm): 5.6 54.06 sec trasel

Required Purge Time (min): 36 min

Water Quality

Sample Time: 17:32

Field Filtered? Y ✓ N not pH, cond, turb, bact

Blank Set Collected? Y ✓ N

Duplicate Set Collected? Y N ✓

Sampler Signature: [signature]

15X

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
16:12		280.55						SWL
16:47			5 (54.5)					on clear, no odor
16:57		300-1.1						
17:00								clear, no odor
17:05				7.53	1.385 mS	1.382 mS	25.1	
17:09		316.45						
17:13			13					valved back; losing suction
17:17			3.3 (1:30)					
17:20				7.66	1.490 mS	1.477 mS	25.4	
17:25			3.0 (1:39)	7.67	1.481 mS	1.481 mS	25.0	
17:32				7.68	1.478 mS	1.476 mS	25.1	collect samples
17:40								off

end 17:25

26 / 130 gal

50 gal more

15 min @ 3 gal/min

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Personnel: Erik Boe

Date: 6/1/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4836380

Easting: 0469927

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8

WL Meas Point Desc: Top of casing

Meas Total Depth [ft, BMP]: ~~37~~

Locked? Y X N _____

Well Condition: N(

Pump Description

Permanent: _____ Temporary: X

Type: Grundfos 3"

Capacity (gpm): _____ HP: 1.5

Setting Depth (ft): 36.5

Drop Pipe Diam (in): 1.25

Notes: _____

Casing Purge

3x Casing Volume (gal): 35

Flow Rate (gpm): 3

Required Purge Time (min): 12

Water Quality

Sample Time: 12:44

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
12:17		26.86						static WL
12:19			6					Pump on
~~12:22~~			6					turbid water
12:23		36.4						
12:24								pump off (sucking air
12:34		28.94						Recovering.
12:35			3					on
12:36				8.78	850	1014	16.5	
12:40				8.84	798	940	17.2	
12:45				8.88	782	921	17.2	
12:44								Samples completed.

RMEC sustained flow of 2 gpm consistant w/ our obs. bring 12V pump next time.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: Erik Boe

Date: 5/31/12

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Page No.: 1 of 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4835229

Easting: 0471504

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.9 ft

WL Meas Point Desc: Top of Casing

Meas Total Depth [ft, BMP]: 215

Locked? Y X N _____

Well Condition: no change.

Pump Description

Permanent: _____ Temporary: X

Type: Grundfos 3"

Capacity (gpm): _____ HP: 1.5

Setting Depth (ft): 200 ft

Drop Pipe Diam (in): 1.25 in

Notes: _____

Casing Purge

3x Casing Volume (gal): 390

Flow Rate (gpm): 19.5 gpm

Required Purge Time (min): 20 min

Water Quality

Sample Time: 13:10

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y X N _____

Sampler Signature: S. T.

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
12:40		95.43						
12:43								Pump on
12:44			20					(5/15)(60) = 20 gpm
12:46		103.23						
12:57		103.23						
12:58			20±	7.74	295	352	16.6	clear
13:06			20±	7.78	296	352	16.7	
13:07		103.24						
13:09				778	296	352	16.7	
13:10								sample
1317				778	296	352	16.8	finish
13:19		103.31						off

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop (Rye Field) Well

Page No.: 1 of 2

Personnel: Erik Boe

Date: 6/1/12

SPF Sounder #: SPF WL0002-01

Sounder Correction: _____

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 0466562

Well Description Static WL = 95' (Baseline)

Surface Casing Diam (in): 12"

Well Casing Diam (in): 12"

Surface Casing Height AGL (ft): 2.5'

WL Meas Point Desc: Top of steel 6" coupler.

Meas Total Depth [ft, BMP]: 482

Locked? Y _____ N X

Well Condition: NC

Pump Description

Permanent: X Temporary: _____

Type: Franklyn

Capacity (gpm): 20 gpm HP: 1.0

Setting Depth (ft): 168

Drop Pipe Diam (in): 1 1/2 @ 1.5 / 2 @ 1.25

Notes: existing generator under shed (Brings Boys)

Casing Purge

3x Casing Volume (gal): 6597 gal (based on cond 12" casing dia)

Flow Rate (gpm): 20

Required Purge Time (min): 320 min = 5.5 hrs

Water Quality

Sample Time: 14:45 Stable parameters.

Field Filtered? Y X N _____

Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
13:40		107.93						Static WL
13:49	0		26					Pump on (5 gal / 11.5 s)(60 s / 1 min)
13:51		114.59						
13:53		119.08	26					
13:57		125.59						
14:01		129.85		8.30	330	359	20.8	
14:07								
14:08		139.18	26					
14:12				8.38	330	359	20.7	
14:13	24		20					Backed off flow due to PWL
14:16		145.13						
14:21		148.23		8.42	331	360	20.6	
14:26			15					Backed off flow due to PWL
14:28		151.01						
14:32		152.04						
14:45				8.46	332	361	20.6	

(482 - 108) = (~~288~~ 374) = 294 ⇒ 3x = (882 cm³)(7.48 gal / 10³) = 6597 gal = 3x

Bishop Well

Time	Elapsed Time [min]	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	Notes (Visual Appearance)
14:39		153.38	15					
14:45				~~8.47~~	~~331~~	~~361~~	~~20.6~~	sample taken
14:49		155.40		8.47	331	361	20.6	
14:56		156.49						
14:57		[redacted]						Pump off
14:58		154.75						Recovery
15:00		152.03						
15:05		147.14						
15:10		143.00						
15:15		139.19						

Q1 2013

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Personnel: J Thompson
Date: 3-26-13
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: windy + warm
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): 3
GPS Coord. (UTM 11N, NAD83)
Northing: 4835250
Easting: 471497

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.3
WL Meas Point Desc: hole near top of casing = 3.1' AGS
Const Depth [ft, BMP]: 203
Locked? Y _____ N ✓
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Unknown HP: unk
Setting Depth (ft): unk
Drop Pipe Diam (in): unk
Notes: existing pump in well

Casing Purge
3x Casing Volume (gal): 515
Flow Rate (gpm): 9 (33 kcl)
Required Purge Time (min): 57

Water Quality
Sample Time: 13:40
Field Filtered? Y ✓ N _____
Samples Filtered: metals & per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:15	90-0.35							SWL
12:35		9						pump on brown then clear
12:55	151.65	9	7.48	290.5	352.1	15.8	0.7 / 8%	clear
13:15	180-0.52	9	7.76	288.2	349.8	15.9	1.3 / 15%	valve back 7 gpm
13:35	181.83	7	7.74	287.0	341.7	16.6	4.6 / 54%	
13:40								collect samples

Need 1" nipple to connect to 1" tee

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761
Personnel: J Thompson
Date: 3-18-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: ____
Weather: cool breezy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): 3
GPS Coord. (UTM 11N, NAD83)
Northing: 4835286
Easting: 471532

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of sounder coupler = 0.19' below top of surf casing
Const Depth [ft, BMP]: 118
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.5
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: New pump installed 3/13

Water Quality
Sample Time: 12:15
Field Filtered? Y ✓ N ____
Samples Filtered: Metals at lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 62
Flow Rate (gpm): 10 (30 sec) 6
Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:55	90-0.23							SWL
12:09		~~10~~	~~7.81~~	~~2395~~	~~358.6~~	~~15.5~~	~~7.1/80~~	pump on
12:11	90-.07	10	7.81	293.5	358.6	15.5	7.1/80	
12:13	90-.05	10	7.87	292.8	357.2	15.6	6.5/75	
12:15	90-.03	10	7.87	290.3	354.1	15.5	6.6/76	
								collected samples 12:15

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Personnel: J Thompson
Date: 3-18-13
SPF Sounder #: SPE WL 300-01
Sounder Correction: ____
Weather: warm breezy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): 3
GPS Coord. (UTM 11N, NAD83)
Northing: 4935105
Easting: 469094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 2.92
WL Meas Point Desc: top of sounder coupler = 0.21' blw top of surface casing
Const Depth [ft, BMP]: 323
Locked? Y ✓ N ____
Well Condition: cone part cracked

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 322
Drop Pipe Diam (in): 1.25
Notes: Installed 3/13

Water Quality
Sample Time: 18:30
Field Filtered? Y ✓ N ____
Samples Filtered: Metals per lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ✓ N ____ TRIP BLANK 17:35
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 200
Flow Rate (gpm): 3 (1:40)
Required Purge Time (min): 67

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:01	280 - 0.14							start
17:20								pump on
17:40	—	3	7.86	1.271	1.342	23.8	1.0 / 13	cloudy
18:00		3	7.83	1.337	1.365	24.0	1.1 / 15	clearing up
18:20		3	7.85	1.378	1.402	24.1	1.4 / 19	
18:37		3	7.84	1.371	1.399	23.9	1.9 / 26	
18:30								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 3-14-13
SPF Sounder #: SPFwL360-01
Sounder Correction: _____
Weather: warm cloudy
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): _____
GPS Coord. (UTM 11N, NAD83)
Northing: 4836380
Easting: 469927

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.8
WL Meas Point Desc: top of sounder cover = 0.18' blw top of steel casing
Const Depth [ft, BMP]: 45
Locked? Y ✓ N _____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.5
Setting Depth (ft): 42
Drop Pipe Diam (in): 1.25
Notes: new pump

Water Quality
Sample Time: 16:34
Field Filtered? Y ✓ N _____
Samples Filtered: Nutrients at pace lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 41
Flow Rate (gpm): 3 (16:40)
Required Purge Time (min): 14

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:30	30.03							SWL
16:14		3						Pump on
19								
26	36.35		6.77	.678	.837	15.1	6.7 / 76.7	water - brown colors
16:29	NM		6.80	.683	.838	15.3	6.7 / 76.2	bottom of sounder?
16:32	NM		6.78	.684	.837	15.3	6.5 / 73.2	

300

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772
Personnel: J Thompson
Date: 3-18-13
SPF Sounder #: SPL WL 300-01
Sounder Correction:
Weather: warm breezy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): 3
GPS Coord. (UTM 11N, NAD83)
Northing: 4835229
Easting: 471509

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.9'
WL Meas Point Desc: top of sounder conduit = 0.22' blw top of surf casing
Const Depth [ft, BMP]: 207
Locked? Y ✓ N ____
Well Condition: cone pad cracked

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 126
Drop Pipe Diam (in): 1.25
Notes: New pump 3/13

Water Quality
Sample Time: 13:35
Field Filtered? Y ✓ N ____
Samples Filtered: Metals + per lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ✓ N ____ 13:50

Casing Purge
3x Casing Volume (gal): 224
Flow Rate (gpm): 26 (11 sec)
Required Purge Time (min): 9

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:08	95.64							SWL
13:15								pump on
13:20	100.13	26	7.93	271.9	327.5	16.1	5.1 / 57	
13:23	100.15	26	7.94	272.2	327.5	16.2	4.5 / 52	
13:26	100.16		7.93	272.1	327.5	16.1	4.5 / 52	
13:35								collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-26-13

Photos (#,Name): _____

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4833564

Weather: overcast windy

Easting: 466562

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): NA

Type: unknown HP: 1.0 from control box

Well Casing Diam (in): 12

Setting Depth (ft): 167 ?

Surface Casing Height AGL (ft): 6" = 0.53' b/w drum top

Drop Pipe Diam (in): unk

WL Meas Point Desc: top of 6" casing extension = 0.53' b/w top of drum & 3.2' AGS

Notes: existing pump in well

Const Depth [ft, BMP]: 482

Water Quality

Locked? Y _____ N ✓

Sample Time: 17:00

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals tubes lab

3x Casing Volume (gal): 66.33

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 15 (20s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 4.42

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:46	107.74							SWL - may be recovering from brief pump on
15:00								pump on - initially cloudy, then clear
15:30	123.19	15	8.43	311.2	342.8	20.2	0.4 / 5%	clear
16:00	130.31	15	8.51	311.4	344.5	20.0	0.3 / 3%	clear
16:30	135.28	15	8.48	313.6	346.8	20.0	0.2 / 2%	clear
17:00	138.11	15	8.46	313.5	348.3	19.8	0.2 / 2%	collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM Well
Page No.: 1 of 1
Personnel: J Thompson
Date: 3-18-13
Photos (#,Name): 3
SPF Sounder #: SPF 300+01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: ____
Northing: 4835898
Weather: warm breezy
Easting: 470406
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: ____
Surface Casing Diam (in): —
Type: Grundfos HP: 0.5
Well Casing Diam (in): 6
Setting Depth (ft): 168
Surface Casing Height AGL (ft): 0.85'
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of sounder coupler = 0.19' above 6" casing
Notes: new pump 3/13
Const Depth [ft, BMP]: 175
Water Quality
Locked? Y ____ N ✓
Sample Time: 15:42
Well Condition: good
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: Metals & per lab
3x Casing Volume (gal): 82
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 5 (60 ml/min)
Transfer Blank Collected? Y ____ N ✓
Required Purge Time (min): 16
Duplicate Set Collected? Y ____ N ✓
Sampler Signature:

additional samples collected at 6x & 12x casing volumes

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:08	156.55							SWL
15:24								pump on
		5						
15:29	161.63	5	8.17	.705	.853	15.9	1.3 / 15	cloudy
15:34	162.75	5	8.12	.764	.921	15.8	0.51 6	
15:39	163.42	5	7.86	.987	1.196	15.9	1.3 / 15	
15:42								collect samples
15:55	165-.87	5	7.55	1.382	1.672	15.9	—	
16:00		5	7.48	1.470	1.779	16.0	—	collect samples
16:10	165-.48	5	7.34	1.651	1.996	15.9	—	
16:25		5	7.29	1.703	2.060	16.0		
16:30		5	7.27	1.747	2.113	15.9	—	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1 107469

Page No.: 1 of 1

Personnel: T Thompson

Date: 3-14-13

Photos (#,Name): 3

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835644

Weather: Warm - Cloudy

Easting: 421460

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 12

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3.5

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler: 3.68' AGS

Notes: new pump

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: 18:00

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals (per lab

3x Casing Volume (gal): 204

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 20 (15 sec)

Transfer Blank Collected? Y ✓ N _____ Field Transfer

Required Purge Time (min): 10

Duplicate Set Collected? Y _____ N ✓ Trip Blank

Sampler Signature: _____ 3-4-13 17:39

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:22	55.30							SWL
17.43		10						pump on
17:47	70'	10	7.78	322.4	388.5	16.1	5.6/66	clear
50	70.09	10	7.80	322.4	388.3	16.1	5.2/61	
17 53	70.16	10	7.81	322.3	388.1	16.1	5.2/60	clear
18:00								collect sample

SWL 55.41

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4
Personnel: J Thompson
Date: 3-14-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: warm cloudy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): _____
GPS Coord. (UTM 11N, NAD83)
Northing: 4838740
Easting: 470557

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.52
WL Meas Point Desc: top of sounder coupler = 0.20' blw top of surf casing
Const Depth [ft, BMP]: 370
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 1.5
Setting Depth (ft): 126
Drop Pipe Diam (in): 1.25
Notes: new pump

Casing Purge
3x Casing Volume (gal): 566
Flow Rate (gpm): 30
Required Purge Time (min): 19

Water Quality
Sample Time: 14:25
Field Filtered? Y ✓ N ____
Samples Filtered: Metals + ACZ lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:47	82.87							SWL
13:56		30						pump on
14:02	92.35	30	8.77	0.530	0.638	16.1	2.6 / 26	slightly milky
14:08	92.82	30	8.79	0.530	0.638	16.1	0.3 / 3%	
14:14	92.96	30	8.79	0.530	0.638	16.1	0.4 / 5%	slightly milky
14:25								collect samples

14:15 ←

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod 1 Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/17/13 Photos (#,Name): multiple

Weather: sunny, windy, ~45°F

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Prod 1

Spring Sampling Point Description Sampled from discharge pipe, ~1½"

Spring Flow Rate (gpm) Flowing (Volume: 1L Time: 11.6 sec)

Water Quality

Sample Time: ~~14:40~~ 13:40

Field Filtered? ~~Y~~ N

Samples Filtered: —

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:40								sampled WQ
13:50	1L/11.6sec	8.35	508	600	10.9	6.2	70%	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 3-26-13

SPF Sounder #: SPF WL 300-01

Sounder Correction: _____

Weather: windy cool

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): 3

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 471431

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.4' AGS

WL Meas Point Desc: top of well cap = 3.38' AGS

Const Depth [ft, BMP]: 550'

Locked? Y _____ N ✓

Well Condition: good, well needs protective cap

Pump Description

Permanent: ✓ Temporary: _____

Type: Grundfos HP: 1.5?

Setting Depth (ft): unknown

Drop Pipe Diam (in): 1.25

Notes: pump used for May 12 monitoring installed in this well?

Casing Purge

3x Casing Volume (gal): 2193

Flow Rate (gpm): 30 (10 sec)

Required Purge Time (min): 73

Water Quality

Sample Time: 11:40

Field Filtered? Y ✓ N _____

Samples Filtered: metals + anion lab

Equip Blank Collected? Y _____ N ✓

Transfer Blank Collected? Y _____ N ✓

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:10	56.73							SWL
10:25								pump on
10:45	105.14	30	7.96	284.5	323.4	18.7	2.8/33	water muddy
11:05	115.63	30	8.04	284.7	322.9	18.8	2.5/30	water clear
11:25	122.32	30	8.01	285.7	324.0	18.8	2.5/31	
11:40	—	30	7.99	286.2	324.9	18.8	2.5/31	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 3-14-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: warm cloudy 70°F
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): 3
GPS Coord. (UTM 11N, NAD83)
Northing: 4838778
Easting: 470535

Well Description
Surface Casing Diam (in): 6
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of sounder coupler 0.86' above well cap; well cap 3' AGS
Const Depth [ft, BMP]: 375
Locked? Y _____ N ✓
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 1.5
Setting Depth (ft): 147 blw toc
Drop Pipe Diam (in): 1.25
Notes: new pump installed 3/13

Water Quality
Sample Time: 12:40
Field Filtered? Y ✓ N _____ metals + per lab
Samples Filtered: per lab / metals
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 13.11
Flow Rate (gpm): 30 (10 sec)
Required Purge Time (min): 44

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:15	80.52							SWL
11:35								pump on / water black
11:50	100-0.82	30	8.53	0.692	0.842	15.7	7.2/83	milky water
12:05	100.05	30	8.50	0.702	0.851	15.8	7.1/83	milky
12:20	100.96		8.49	0.711	0.861	15.9	4.5/56	milky
12:40								samples collected
								* DO measured in bucket w/ discharge
								hose inserted - created turbulence
								DO may be questionable

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Springs

Page No.: 1 of 1

Personnel: Jason Thompson / Erik Boe

Date: 3/26/13

Photos (#,Name): —

Weather: sunny / warm (~65°F)

GPS Coord. (UTM 11N, NAD83)

Northing: 4839604 Easting: 467782

Spring Source Description Poison Spring as noted on USGS Qual.

Spring Sampling Point Description Sampled from water flowing out crack on concrete well located ~100' down gradient from poison spring source.

Spring Flow Rate (gpm) NA (Volume: — Time: —)

(flowing out side of crack, see pics)

Water Quality

Sample Time: _____

Field Filtered? Y ~~N~~

Samples Filtered: —

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
18:10		9.26	4265	466.9	20.5	1.5	20	
18:30								sampled WDR

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/13/13

Photos (#,Name): multiple

Weather: overcast ~65 F

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description from spout to tank; Twin springs North

Spring Sampling Point Description sampled from ~1½" pipe discharging to stock tank.

Spring Flow Rate (gpm) _____ (Volume: 1 L Time: 9.0s)

Water Quality

Sample Time: 14:40

~~Field Filtered?~~ Y ____ N ____

~~Samples Filtered:~~ _____

Equip Blank Set Collected? Y X N ____ 14:35

Transfer Blank Set Collected? Y X N ____ 14:30

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:40								sampled.
15:00	~1L/9.0s							meas flow rate.
15:10						7.5	103%	
15:15			307	410	11.9			
15:20		6.92						

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/13/13

Photos (#,Name): multiple

Weather: overcast ~65 F

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description fed from twin springs.

Spring Sampling Point Description Sampled from discharge from ~1½" pipe feeding the only stock tank.

Spring Flow Rate (gpm) _____ (Volume: 5 gal Time: 48 sec)

Water Quality

Sample Time: 16:35

Field Filtered? ~~Y N~~

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y X N ____ 16:40

Sampler Signature: S.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:35	5gal/48s							meas Q w/ 5gal bucket
15:40		6.91	317	412	12.9	8.3	102%	parameters.
16:35								sampled
16:40								Duplicate sampled.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Stock Tank

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/19/13

Photos (#,Name): multiple

Weather: sunny, windy, ~50°F

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description —

Spring Sampling Point Description Grassy spring stock tank discharge pipe (northern tank)

Spring Flow Rate (gpm) _____ (Volume: 1 L Time: 41.4 sec)

Water Quality

Sample Time: 14:30

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:30								Sampled WQ
14:36	1/41.4	7.33	308	471	6.9	5.8	55%	
14:36								

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/13/13 Photos (#,Name): multiple

Weather: cloudy/overcast ~ 36° F

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Southern most of 3 tanks, most flow. (see pictures) measured Q in 2nd tank; documented (photos) pond and source.

Spring Sampling Point Description sampled from ~1½" pipe that fills southern most (main) tank.

Spring Flow Rate (gpm) 2.55 L/min (Volume: 1 L Time: 23.5 sec)

Water Quality

Sample Time: 9:50

~~Field Filtered?~~ ~~Y ____ N ____~~

Samples Filtered: —

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.

Time	Flow Rate ~~[gpm]~~	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:00	2.55 L/min							(1 Liter / 23.5 s) 60 = 2.55
9:35						8.8	89%	
9:38			255	366	9.1			
9:42		6.64						
10:15	60 mL / 20.26 sec							middle tank flow rate

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs
Personnel: Erik Boe
Date: 3/17/13
Weather: _____

Page No.: 1 of 1
Photos (#,Name): multiple

GPS Coord. (UTM 11N, NAD83)

Northing: ~ Easting: ~

Spring Source Description Whiskey springs

Spring Sampling Point Description Discharge to tank

Spring Flow Rate (gpm) _____ (Volume: 1L Time: 17.9 sec.)

Water Quality

Sample Time: 16:30
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N X
Transfer Blank Set Collected? Y X N _____
Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:30								Samples collected
16:35	1L/17.9sec	7.83	400	509	13.8°	8.8	96%	
17:00								including more transfer blank (Trip-Field Blank)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/13/13

Photos (#,Name): multiple.

Weather: overcast / ~50°F

GPS Coord. (UTM 11N, NAD83)

Northing: 4840176

Easting: 0471661

Spring Source Description Spring flow coming out ~1½" HDPE pipe, out of eroded slope; see pictures. Low flow.

Spring Sampling Point Description Sampling from crack in HDPE pipe.

Spring Flow Rate (gpm) _____ (Volume: 60 mL Time: 30.5 sec)

Water Quality

Sample Time: 12:15

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: E M. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:52	60mL 30.5s					9.8	100%	crack in HDPE
11:55		7.06	571	882	6.7			"
12:15								Sampled

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Springs Upper Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/17/13 Photos (#,Name): multiple.

Weather: sunny and windy!

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sourdough basin

Spring Sampling Point Description discharge from stock tank y w/ 1½" pipe.

Spring Flow Rate (gpm) _____ (Volume: 500mL Time: 35.45sec)

Water Quality

Sample Time: 11:50

Field Filtered? Y ~~—~~ N _____

Samples Filtered: ~~—~~

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: EMT

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:50								sampled water
12:00								calibrated DO
12:05								calibrated pH
12:10								calibrated EC/SC
12:15	500 mL / 35.45sec							
12:20								
12:25		7.19	261	393	7.5	6.9	69%	Parameters.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/13/13 Photos (#,Name): multiple.

Weather: overcast, ~45°F

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Upper (Southernmost) of 3 stock tanks.

Spring Sampling Point Description discharge from pipe into upper (main) tank.

Spring Flow Rate (gpm) _____ (Volume: 1L Time: 10.5 sec)

Water Quality

Sample Time: 11:00

~~Field Filtered?~~ ~~Y~~ ~~N~~

~~Samples Filtered:~~

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: E.T.C.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:40	1L/10.5 sec							upper tank.
10:45			280	393	10.0	9.7	101	"
10:48		6.85						
11:20								downstream pics

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: Erik Boe

Date: 3/18/13

SPF Sounder #: WL1000-01

Sounder Correction: _____

Weather: clear, sunny, few clouds.

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in): 8"

Well Casing Diam (in): 4"

Surface Casing Height AGL (ft): 2.77'

WL Meas Point Desc: TOP of 4" pipe. 2.4' agle

Const Depth [ft, BMP]: _____

Locked? Y Master 3246 N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): multiple.

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 0470996

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:00	619.34							

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: Erik Bal

Date: 3/18/13

SPF Sounder #: WL1000-01

Sounder Correction: _____

Weather: Sunny, wind

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in): 8"

Well Casing Diam (in): 4"

Surface Casing Height AGL (ft): 2.8'

WL Meas Point Desc: Top of 4" pipe, 2.2' agl

Const Depth [ft, BMP]: _____

Locked? Y master 3246 N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): multiple

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 0469034

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:00	273.04	—	—	—	—	—	—	

~~hang logger, drill, Ideas?~~ ~~4" PVC is 0.6' below TOC, tough to~~ Took ~~cap to add I-bolt.~~

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: Erik Bay

Date: 3/18/13

SPF Sounder #: WL10000-01

Sounder Correction: _____

Weather: sunny, wind

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in): 8"

Well Casing Diam (in): 2" (w/ 3/4" Poly pipe)

Surface Casing Height AGL (ft): 2.23'

WL Meas Point Desc: Top of 2" pipe, 2.13' agl

Const Depth [ft, BMP]: _____

Locked? Y (master 0616) N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): multiple

GPS Coord. (UTM 11N, NAD83)

Northing: 4035616

Easting: 0468339

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:35	140.66							

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2
Personnel: Erik Boe
Date: 3/19/13
SPF Sounder #: WL1000-01
Sounder Correction: _____
Weather: Sunny, wind
Wat Lev Transducer Download? Y ~~N~~

Page No.: 1 of 1
Photos (#,Name): Multiple -
GPS Coord. (UTM 11N, NAD83)
Northing: 4836785
Easting: 0468001

Well Description
Surface Casing Diam (in): 8"
Well Casing Diam (in): 2"
Surface Casing Height AGL (ft): 2.25'
WL Meas Point Desc: Top of 2" PVC Pipe, 2.0' agl
Const Depth [ft, BMP]: _____
Locked? Y (master 3400) N _____
Well Condition: _____

Pump Description
Permanent: _____ Temporary: _____
Type: _____ HP: _____
Setting Depth (ft): _____
Drop Pipe Diam (in): _____
Notes: _____

Casing Purge
3x Casing Volume (gal): _____
Flow Rate (gpm): _____
Required Purge Time (min): _____

Water Quality
Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____
Equip Blank Collected? Y _____ N _____
Transfer Blank Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:55	57.37							3/4" Poly pipe installed in 2".
								ODWR tag broke off

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW 2

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/8/13

Photos (#,Name): multiple.

SPF Sounder #: WL1500-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4834079

Weather: Sunny, wind

Easting: 0470397

Wat Lev Transducer Download? Y _____ N _____

Well Description

Pump Description

Surface Casing Diam (in): 6"

Permanent: _____ Temporary: _____

Well Casing Diam (in): 4"

Type: _____ HP: _____

Surface Casing Height AGL (ft): 2.2'

Setting Depth (ft): _____

WL Meas Point Desc: 2.2' - 0.16' = 2.04 - Top of cap on 4" PVC pipe

Drop Pipe Diam (in): _____

Const Depth [ft, BMP]: _____

Notes: _____

Locked? (Y) Master 0616 N _____

Water Quality

Well Condition: _____

Sample Time: _____

Casing Purge

Field Filtered? Y _____ N _____

3x Casing Volume (gal): _____

Samples Filtered: _____

Flow Rate (gpm): _____

Equip Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:15	165.04 - 0.56							no clearance on dodge. walked.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW 3

Personnel: Erik Boe

Date: 3/18/13

SPF Sounder #: WL 1000-01

Sounder Correction: _____

Weather: Sunny, wind

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in): 6 inch

Well Casing Diam (in): 4 inch

Surface Casing Height AGL (ft): 3.40 feet

WL Meas Point Desc: Top of surface casing. (marked)

Const Depth [ft, BMP]: _____

Locked? Y (master 0502) N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): multiple

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 0470562

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:15	227.35							

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3/13/13 9:15
Calibration Method: 2 - point
Buffers Used: 7 & 10
Slope Deviation:
Electrode Efficiency: 92.5%
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3/13/13 9:20
Calibration Method: Single point, Auto
Cell Constant: 4.83 Default? X Yes ____ No
Temperature Coefficient: 1.91 % Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: 1413 @ 25°C
Conductivity Standard @ 25C:
Successful Calibration? X Yes ____ No
If No, List Corrective Action: Adj 1421 to 1413
Signature: S.A.T.

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3/13/13 9:30
Calibration Method: Auto Calib
Initial DO Saturation Reading: 101 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3-14-13 10:30 am
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 100.8
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Note: probe replaced just prior to calibration

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3-14-13 10:45 am
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 Default? ✓ Yes ____ No
Temperature Reference: 25.0 C Default? ✓ Yes ____ No
Conductivity Standard: 1413 µs @ 25°C
Conductivity Standard @ 25C: 1413
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3-14-13 10:56 am
Calibration Method: auto
Initial DO Saturation Reading: 100.5 (Should read 100.5%)
Calibration Needed? ____ Yes ✓ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3/17/13 12:05
Calibration Method: 2 - point
Buffers Used: 7 and 10
Slope Deviation:
Electrode Efficiency: 96.5%
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3/17/13 12:10
Calibration Method: 1 point
Cell Constant: 4.92 Default? ____ Yes ____ No
Temperature Coefficient: ____ Default? ____ Yes ____ No
Temperature Reference: ____ Default? ____ Yes ____ No
Conductivity Standard: 1413 @ 25°C
Conductivity Standard @ 25C: "
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3/17/13 12:00
Calibration Method: Auto Cal
Initial DO Saturation Reading: 101% (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3-18-13 10:07
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 100.0
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3-18-13 10:18
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 Default? ✓ Yes ____ No
Temperature Reference: 25 Default? ✓ Yes ____ No
Conductivity Standard: 1413 µS
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3-18-13 10:24
Calibration Method: auto
Initial DO Saturation Reading: 101 (Should read 100.5%)
Calibration Needed? ____ Yes ✓ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3-25-13 17:05
Calibration Method: 2 - point
Buffers Used: 7.00 / 10.00
Slope Deviation: —
Electrode Efficiency: 97.2
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

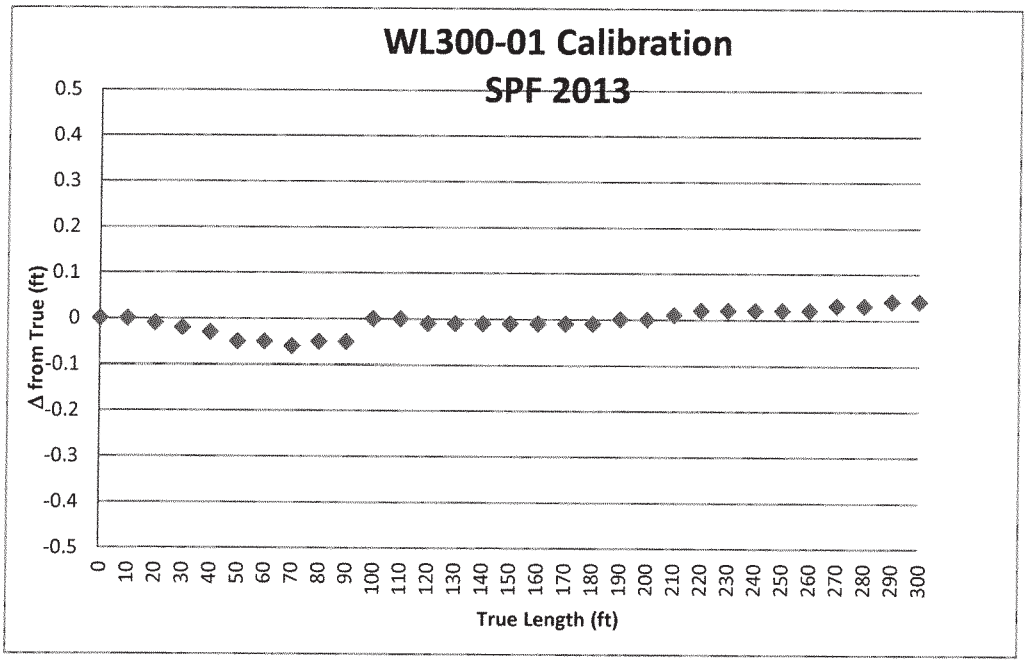
Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3-26-13 10:12
Calibration Method: Known Standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 Default? ✓ Yes ____ No
Temperature Reference: 25°C Default? ✓ Yes ____ No
Conductivity Standard: 1413 uS
Conductivity Standard @ 25C: 1413 uS @ 25°C
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3-25-13 17:00
Calibration Method: auto
Initial DO Saturation Reading: 104 (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No → reads 101%
If No, List Corrective Action: ____
Signature: [signature]

SPF Well Sounder Calibration Check Sheet
Personel: Erik Boe
Date: 5/9/2013
Method: 100 ft steel tape

SPF-WL300-01 (10 ft units)	Δ (ft)
0	0
10	0
20	-0.01
30	-0.02
40	-0.03
50	-0.05
60	-0.05
70	-0.06
80	-0.05
90	-0.05
100	0
110	0
120	-0.01
130	-0.01
140	-0.01
150	-0.01
160	-0.01
170	-0.01
180	-0.01
190	0
200	0
210	0.01
220	0.02
230	0.02
240	0.02
250	0.02
260	0.02
270	0.03
280	0.03
290	0.04
300	0.04

SPF-WL1000-01 (10 ft units)	Cumulative Δ (ft)
0	0
10	0
20	-0.01
30	-0.02
40	-0.03
50	-0.05
60	-0.05
70	-0.06
80	-0.05
90	-0.05
100	0
110	0
120	-0.01
130	-0.01
140	-0.01
150	-0.01
160	-0.01
170	-0.01
180	-0.01
190	0
200	0
210	0.01
220	0.02
230	0.02
240	0.02
250	0.02
260	0.02
270	0.03
280	0.03
290	0.04
300	0.04

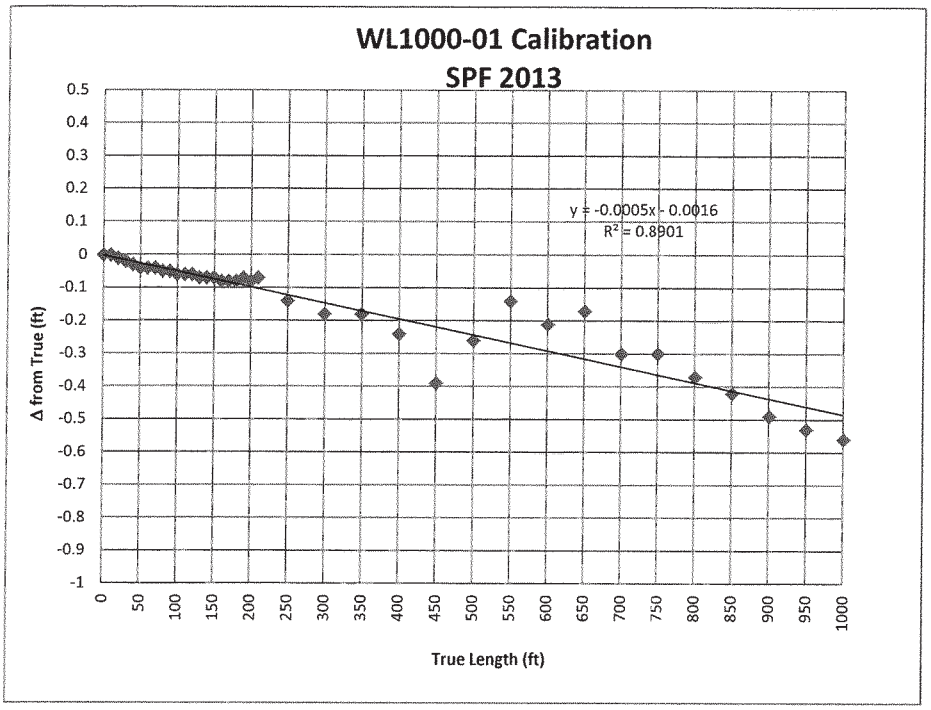

WL300-01 Calibration
SPF 2013
Δ from True (ft)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
True Length (ft)

SPF Well Sounder Calibration Check Sheet
Personel: Erik Boe
Date: 5/9/2013
Method: 100 ft steel tape

SPF-WL1000-01 (10 ft units)	Δ (ft)	SPF-WL1000-01 (10 ft units)	Δ (ft)
0	0	510	
10	0	520	
20	-0.01	530	
30	-0.02	540	
40	-0.03	550	0.12
50	-0.04	560	
60	-0.04	570	
70	-0.04	580	
80	-0.05	590	
90	-0.05	600	0.05
100	-0.06	610	
110	0	620	
120	0	630	
130	-0.01	640	
140	-0.01	650	0.04
150	-0.01	660	
160	-0.02	670	
170	-0.02	680	
180	-0.02	690	
190	-0.01	700	-0.09
200	-0.02	710	
210	0.01	720	
220		730	
230		740	
240		750	0
250	-0.06	760	
260		770	
270		780	
280		790	
290		800	-0.07
300	-0.1	810	
310		820	
320		830	
330		840	
340		850	-0.05
350	0	860	
360		870	
370		880	
380		890	
390		900	-0.12
400	-0.06	910	
410		920	
420		930	
430		940	
440		950	-0.04
450	-0.15	960	
460		970	
470		980	
480		990	
490		1000	-0.07
500	-0.02		

SPF-WL1000-01 (10 ft units)	Cumulative Δ (ft)
0	0
10	0
20	-0.01
30	-0.02
40	-0.03
50	-0.04
60	-0.04
70	-0.04
80	-0.05
90	-0.05
100	-0.06
110	-0.06
120	-0.06
130	-0.07
140	-0.07
150	-0.07
160	-0.08
170	-0.08
180	-0.08
190	-0.07
200	-0.08
210	-0.07
220	
230	
240	
250	-0.14
260	
270	
280	
290	
300	-0.18
310	
320	
330	
340	
350	-0.18
360	
370	
380	
390	
400	-0.24
410	
420	
430	
440	
450	-0.39
460	
470	
480	
490	
500	-0.26

510	
520	
530	
540	
550	-0.14
560	
570	
580	
590	
600	-0.21
610	
620	
630	
640	
650	-0.17
660	
670	
680	
690	
700	-0.3
710	
720	
730	
740	
750	-0.3
760	
770	
780	
790	
800	-0.37
810	
820	
830	
840	
850	-0.42
860	
870	
880	
890	
900	-0.49
910	
920	
930	
940	
950	-0.53
960	
970	
980	
990	
1000	-0.56


WL1000-01 Calibration
SPF 2013
y = -0.0005x - 0.0016
R² = 0.8901
Δ from True (ft)
True Length (ft)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1000

Q2 2013

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 6-17-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: clear sunny
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): 8 Yes

GPS Coord. (UTM 11N, NAD83)
Northing: 4838778
Easting: 470535

Well Description
Surface Casing Diam (in): 6 lower is 10"
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3
WL Meas Point Desc: top of sounder coupler = 0.16' above cap
Const Depth [ft, BMP]: 375
Locked? Y _____ N ✓ new cover not locked
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: grundfos HP: 1.5
Setting Depth (ft): 147 blw toc
Drop Pipe Diam (in): 1.25
Notes: perm pump

Water Quality
Sample Time: 11:20
Field Filtered? Y ✓ N _____
Samples Filtered: Metals + per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 1311
Flow Rate (gpm): 30 (10 sec)
Required Purge Time (min): 44

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:20	80.49							SWL
10:35								pump on / water black
10:50	92.66	30	8.35	0.643	0.783	15.6	0.5 / 6%	water black / milky
11:05	92.92	30	8.34	0.667	0.808	15.8	0.2 / 2%	water milky
11:20	95-0.13	30	8.34	0.665	0.806	15.8	0.5 / 5%	collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 6-17-13

SPF Sounder #: SPF WL 300-01

Sounder Correction:

Weather: sunny/hot

Wat Lev Transducer Download? Y ____ N ✓ but had to remove to sound well

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top of sounder coupler = 0.20' b/w surf casing

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____ 0616

Well Condition: good

Casing Purge

3x Casing Volume (gal): 566

Flow Rate (gpm): 30 (10 sec)

Required Purge Time (min): 19

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4838740

Easting: 470557

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 1.5

Setting Depth (ft): 126

Drop Pipe Diam (in): 1.25

Notes: perm pump

Water Quality

Sample Time: 12:35

Field Filtered? Y ✓ N ____

Samples Filtered: metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

	Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
	11:55	82.78							SWL
	12:15								pump on - milky then clear
	12:22	90.24	30	8.57	0.504	0.611	15.9	2.8 / 33%	slightly milky
	12:29	90.17	30	8.60	0.511	0.616	16.0	0.7 / 8%	clear
	12:35	90.40	30	8.61	0.512	0.618	16.0	0.4 / 4%	collect samples
11:20	6-20-13	82.32							
									download transducer

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-17-13
Photos (#,Name): Y
SPF Sounder #: SPF WL 300-01
GPS Coord. (UTM 11N, NAD83)
Northing: 4836388
Sounder Correction: _____
Easting: 469927
Weather: clear sunny & hot
Wat Lev Transducer Download? Y _____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): 8
Type: Grundfos HP: 0.5
Well Casing Diam (in): 4
Setting Depth (ft): 42
Surface Casing Height AGL (ft): 2.8
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of sounder cable = 0.18' blw TOC
Notes: perm pump
Const Depth [ft, BMP]: 45
Water Quality
Locked? Y ✓ N _____
Sample Time: 14:25
Well Condition: good
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: metals + perf lab
3x Casing Volume (gal): 41
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 3 (1:40)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 14
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:54	30.44							SWL
14:06								pump on low flow
14:12	36.38	3	6.47	.668	.794	16.6	5.8/77	water brownish color
14:17	36.40	3	6.45	.678	.801	17.0	7.1/86	temp may be effected by low flow thru cell
14:22	36.45	3	6.44	.693	.807	17.6	6.9/84	
14:25								collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-17-13
Photos (#,Name): Y
SPF Sounder #: SPF WL 300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction:
Northing: 4835644
Easting: 471460
Weather: clear sunny + hot
Wat Lev Transducer Download? Y ____ N ✓ but removed to sound well

Well Description
Surface Casing Diam (in): 12
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3.5
WL Meas Point Desc: top of sounder counter = 3.68' AGS
Const Depth [ft, BMP]: 156
Locked? Y ✓ N ____ bonks 4552
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: Redm pump

Water Quality
Sample Time: 15:40
Field Filtered? Y ✓ N ____
Samples Filtered: Metals on pur lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ✓ N ✓
Duplicate Set Collected? Y ✓ N ____ GW-1-D 15:45

Casing Purge
3x Casing Volume (gal): 209
Flow Rate (gpm): 20 (15 sec)
Required Purge Time (min): 10

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:06	55.24							SWL
15:30								pump on
33	65.61	10	7.49	313.7	375.9	16.3	4.7/60%	water clear
37	65.59	10	7.56	313.6	376.1	16.3	5.2/63%	clear
15:40	65.73	10	7.59	313.5	376.0	16.3	5.3/63%	collected sample
15:45								collected duplicate sample
6-20-13 13:17	55.45							transducer downloaded

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1
Personnel: J Thompson
Date: 6-17-13
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: clear sunny & hot
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y
GPS Coord. (UTM 11N, NAD83)
Northing: 4835627
Easting: 471431

Well Description
Surface Casing Diam (in): NA
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.4' AGS
WL Meas Point Desc: top of well cap = 3.38' AGS
Const Depth [ft, BMP]: 550'
Locked? Y _____ N ✓
Well Condition: good - new cap installed

Pump Description
Permanent: ✓ Temporary: _____
Type: Grund Fos HP: 1.5 ?
Setting Depth (ft): unknown
Drop Pipe Diam (in): 1.25
Notes: pump used for May 2012 monitoring installed in well?

Casing Purge
3x Casing Volume (gal): 2193
Flow Rate (gpm): 30 (10 sec)
Required Purge Time (min): 73

Water Quality
Sample Time: 18:15
Field Filtered? Y ✓ N _____
Samples Filtered: metals + gen lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y ✓ N _____
Duplicate Set Collected? Y _____ N ✓

Mercury trip / field blank 18:25

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:42	57.14							SWL
17:00								pump in - water muddy
17:20	98.08	30	7.94	282.3	320.2	18.8	4.01 / 52%	clear
17:40	102.61	30	8.02	281.8	319.6	18.8	2.31 / 28%	clear
18:00	106.57	30	8.01	281.7	320.3	18.7	2.41 / 29%	
18:15	110.05	30	7.99	282.4	321.1	18.7	2.31 / 29%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761 Page No.: 1 of 1

Personnel: J Thompson

Date: 6-18-13 Photos (#,Name): Y

SPF Sounder #: SPFWL 300-01 **GPS Coord. (UTM 11N, NAD83)**

Sounder Correction: Northing: 4835286

Weather: clear warm Easting: 471532

Wat Lev Transducer Download? Y ____ N ✓ **Pump Description**

Well Description Permanent: ✓ Temporary: ____

Surface Casing Diam (in): 8 Type: Grundfos HP: 0.5

Well Casing Diam (in): 4 Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3' Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler = 0.19' btsurface casing Notes: PVC pump

Const Depth [ft, BMP]: 118 **Water Quality**

Locked? Y ✓ N ____ key 3400 Sample Time: 10:15

Well Condition: good Field Filtered? Y ✓ N ____

Casing Purge Samples Filtered: metals & per lab

3x Casing Volume (gal): 62 Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 10 (30s) Transfer Blank Collected? Y ____ N ✓

Required Purge Time (min): 6 Duplicate Set Collected? Y ____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:36	90-0.21							SWL
10:00								pump on
10:05	90-.03	10	7.70	307.1	372.2	15.8	6.1/76%	water slight color-grey
10:10	90.00	10	7.68	306.4	371.3	15.9	6.2/73%	clear
10 15	90.02	10	7.71	305.5	370.5	15.8	6.4/74%	collect sample #1

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-18-13

Photos (#,Name): _____

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835229

Weather: clear warm

Easting: 471504

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 8

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.9'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler = 0.22' blw top of surf casing

Notes: perm pump

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____ key 3246

Sample Time: 11:10

Well Condition: conc pad cracked

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals & per lab

3x Casing Volume (gal): 224

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 26 (11 sec)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 9

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:45	95.71							SWL
11:00								pump on
11:03	102.74	26	7.69	283.5	341.9	16.1	3.5/43%	clear
11:06	102.88	26	7.73	283.4	341.8	16.1	3.1/37%	clear
11:10	102.86	26	7.74	283.2	341.5	16.1	3.2/37%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-18-13
Photos (#,Name): 4
SPF Sounder #: SPF WL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4835250
Weather: clear, warm
Easting: 471497
Wat Lev Transducer Download? Y _____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): 10
Type: unknown HP: unk
Well Casing Diam (in): 6
Setting Depth (ft): unk
Surface Casing Height AGL (ft): 3.3
Drop Pipe Diam (in): unk
WL Meas Point Desc: hole near TOC = 3.1' AGS
Notes: existing pump in well
Const Depth [ft, BMP]: 203
Water Quality
Locked? Y ✓ N ✓ new cap
Sample Time: 12:55
Well Condition: good
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: Metals + per lab
3x Casing Volume (gal): 515
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 9 (33 s)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 57
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:51	90-0.18							SWL
11:55								pump on water clear
12:15	152.15	9	7.68	289.6	349.1	16.1	1.0/13%	clear
12:35	163.62	9	7.72	287.9	344.1	16.4	1.8/21%	clear
12:55	165.48	9	7.74	287.4	343.0	16.5	2.0/24%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-18-13

Photos (#,Name): 4

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835898

Weather: clear warm

Easting: 470406

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): NA

Type: Grundfos HP: 0.5

Well Casing Diam (in): 6

Setting Depth (ft): 168

Surface Casing Height AGL (ft): 0.85'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler = 0.19' above 6" casing

Notes: perm pump

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N _____ new cap

Sample Time: 14:00

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals & perk lab

3x Casing Volume (gal): 82

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 5 (1 min)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 16

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:34	156.31							SWL
13:42								pump in
47	161.98	5	7.89	.759	.915	16.0	1.6 / 19%	water cloudy
52	162.41	5	7.70	.908	1.100	16.0	0.5 / 6%	
13 58	162.69	5	7.61	1.032	1.254	16.1	0.3 / 4%	clear parameters stabilized
14:00								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Personnel: J Thompson
Date: 6-18-13
SPF Sounder #: SPF WL300-01
Sounder Correction: ____
Weather: clear warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): 4
GPS Coord. (UTM 11N, NAD83)
Northing: 4835105
Easting: 469094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 2.92
WL Meas Point Desc: top of sounder coupler = 0.21' b/w top of sand casing
Const Depth [ft, BMP]: 323
Locked? Y ✓ N ____ 3246
Well Condition: cone pad damaged

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 322
Drop Pipe Diam (in): 1.25
Notes: perm pump

Water Quality
Sample Time: 16:00
Field Filtered? Y ✓ N ____
Samples Filtered: metals + per lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 200
Flow Rate (gpm): 3 (1:40)
Required Purge Time (min): 67

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:46	280-.33							SWL
14:50								pump on water cloudy
15:10	—	3	7.50	1.425	1.449	24.1	0.5 / 8%	water slightly softer smell - clearing up
15:30	—	3	7.56	1.485	1.502	24.3	0.4 / 5%	clear
15:50	—	3	7.61	1.517	1.533	24.5	0.8 / 12%	
16:00	—	3	7.62	1.523	1.536	24.5	0.9 / 13%	collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-18-13

Photos (#,Name): Y

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Northing: 4833569

Sounder Correction: _____

Easting: 466562

Weather: clear warm

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): NA

Type: unk HP: 1.0 from controllbox

Well Casing Diam (in): 12

Setting Depth (ft): 167?

Surface Casing Height AGL (ft): 6" = 0.53' blw drum top

Drop Pipe Diam (in): unk

WL Meas Point Desc: top of 6" casing extension = 0.53' blw top of drum

Notes: existing pump

Const Depth [ft, BMP]: 482 @ 3.2' AGS

Water Quality

Locked? Y _____ N ✓

Sample Time: 18:25

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals & per lab

3x Casing Volume (gal): 6633

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 15 (20s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 442

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:20	107.83							SWL
16:25								pump on turbid then clear
16:55	121.66	15	8.47	316.5	343.5	20.1	1.4/18%	clear
17:25	125.98	15	8.48	311.4	344.2	20.0	1.01/13%	
17:55	130-.03	15	8.38	312.8	347.0	19.8	0.3/4%	clear
18:25	131.63	15	8.35	312.7	348.5	19.6	0.41 5%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915 tag 109354
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-20-13
Photos (#,Name): 4
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: overcast warm 70°F
Wat Lev Transducer Download? Y _____ N ✓

GPS Coord. (UTM 11N, NAD83)
Northing: 4935556
Easting: 471320

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 2
Surface Casing Height AGL (ft): 2.41'
WL Meas Point Desc: top of 2" pipe in surf casing = 2.10'
Const Depth [ft, BMP]: 915 995
Locked? Y ✓ N _____ 3400
Well Condition: vent seal cracked at bottom

Pump Description
Permanent: _____ Temporary: _____
Type: _____ HP: _____
Setting Depth (ft): _____
Drop Pipe Diam (in): _____
Notes: _____

Casing Purge
3x Casing Volume (gal): _____
Flow Rate (gpm): _____
Required Purge Time (min): _____

Water Quality
Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____
Equip Blank Collected? Y _____ N _____
Transfer Blank Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:53	76.95							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3 tag 107467

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-20-13

Photos (#,Name): Y1

SPF Sounder #: SPFWL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835591

Weather: overcast warm

Easting: 0470562

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.401

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of surf casing

Notes: _____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N _____ 0502

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:32	227.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 6-20-13

SPF Sounder #: SDF WL1000-01

Sounder Correction: _____

Weather: cloudy warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top of 4" = 2.4' AGS

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____ 3246

Well Condition: good - brnt chip seal/cracked at surface

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): 4

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 0470996

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:04	620.93							SWL
								sounder acting funny

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2 tag 109357

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-20-13

Photos (#,Name): Y

SPF Sounder #: SPE WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4834079

Weather: Cloudy warm

Easting: 0470397

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.2

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of cap on 4" = 2.04' AGS

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____ 0616

Sample Time: _____

Well Condition: good- bent cable seal cracked at surface

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:06	165-.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764 tag 107466 Page No.: 1 of 1

Personnel: J Thompson

Date: 6-20-13 Photos (#,Name): 4

SPF Sounder #: SPF WL300-01 **GPS Coord. (UTM 11N, NAD83)**

Sounder Correction: _____ Northing: 4835103

Weather: Overcast warm Easting: 0469034

Wat Lev Transducer Download? Y _____ N ✓ **Pump Description**

Well Description Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8 Type: _____ HP: _____

Well Casing Diam (in): 4 Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.8' Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 4" 2.2' AGS Notes: _____

Const Depth [ft, BMP]: 305 **Water Quality**

Locked? Y ✓ N _____ 3246 Sample Time: _____

Well Condition: Conc pad Locked Field Filtered? Y _____ N _____

Casing Purge Samples Filtered: _____

3x Casing Volume (gal): _____ Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____ Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:29	273.12							Swl

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6 tag 109368

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-20-13

Photos (#,Name): Y

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835616

Weather: cloudy warm

Easting: 0468339

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 2" 2.13' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____ 0616

Sample Time: _____

Well Condition: conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:43	140.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 84-2

Personnel: J Thompson

Date: 6-20-13

SPF Sounder #: SPFWL300-01

Sounder Correction: _____

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top of 2", 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____ 3400

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 0469001

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:55	57.40							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Personnel: Erik Boe, Jason Thompson

Date: 6/20/13

SPF Sounder #: NA

Sounder Correction: —

Weather: cloudy and cool.

Wat Lev Transducer Download? Y ____ N NA

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): —

Surface Casing Height AGL (ft): —

WL Meas Point Desc: —

Const Depth [ft, BMP]: —

Locked? Y ____ N X

Well Condition: good

Casing Purge

3x Casing Volume (gal): * NA, steady state

Flow Rate (gpm): * 1 Liter / 12.6 sec

Required Purge Time (min): 0

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): 4-2

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Pump Description

Permanent: X Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: Artesian, flowing.

Water Quality

Sample Time: 11:50

Field Filtered? Y ~~N~~

Samples Filtered: —

Equip Blank Collected? Y ____ N X

Transfer Blank Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:40	flowing	*	8.12	495.2	524.5	17.8	1.3 / 15%	
11:50								Samples collected.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe, Jaskon Thompson

Date: 6/20/13 Photos (#,Name): 2-2

Weather: Cool and cloudy.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Gov Corral Spring

Spring Sampling Point Description Upper most stock tank, sampled from ~1½" spring discharge pipe to tank.

Spring Flow Rate (gpm) _____ (Volume: 1 Liter Time: 11.0 sec)

Water Quality

Sample Time: 10:20

Field Filtered? Y — N —

Samples Filtered: see chain of Custody

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:10	1L/11.0s	7.54	321.0	393.0	15.3	8.2	93%	
10:20								Collected WQ Samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank, a.k.a. Grassy Spring Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/20/13 Photos (#,Name): 5-2

Weather: cloudy, cool, sprinkling very light.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Grassy Spring

Spring Sampling Point Description Lower stock tank (~20' DIA), sampled from ~1¼" discharge pipe to tank.

Spring Flow Rate (gpm) _____ (Volume: 500 mL Time: 46 sec)

Water Quality

Sample Time: 12:50

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:20	500 mL / 46s	7.22	388.5	447.0	18.2	3.5	42%	
12:50								

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/26/13 Photos (#,Name): 1-2

Weather: cloudy, cool

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Lowe Spring

Spring Sampling Point Description cracked end of u/ $\frac{1}{4}$" HDPE tubing.

Spring Flow Rate (gpm) — (Volume: 125mL Time: 88 sec)

Water Quality

Sample Time: 9:20

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
8:30	125mL/88sec	7.55	677	779	18.1	8.1	98%	drip/trickle flow
9:20								Sampled WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/26/13 Photos (#,Name): 2-2

Weather: cloudy, cool

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Poison Spring

Spring Sampling Point Description Concrete well structure (2'x2'), flowing out crack on west side.

Spring Flow Rate (gpm) _____ (Volume: 1 L Time: 16 sec flow out crack.)

Water Quality

Sample Time: 10:55

Field Filtered? Y ___ N ___

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: M. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:45	1 4/16s	9.16	426	463	20.8	1.0 mg/L	12%	
10:55								collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe, Jason Thompson

Date: 6/20/13 Photos (#,Name): 1-2

Weather: Overcast and cool, ~55°F

GPS Coord. (UTM 11N, NAD83)

Northing: – Easting: –

Spring Source Description Sagebrush Spring water

Spring Sampling Point Description Uppermost stock tank (1 of 3) and the only one w/ flowing spring water. Sampling from 1½" pipe discharge to stock tank.

Spring Flow Rate (gpm) _____ (Volume: 1L Time: 32.9 sec)

Water Quality

Sample Time: 9:40

Field Filtered? Y — N —

Samples Filtered: See chain of custody.

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:20	1L/32.9 s	7.75	283.0	257.0	14.1°C	7.3	83%	
9:40								Collected samples.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Springs Upper Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/27/13 Photos (#,Name): 10-3

Weather: sunny, warm, bit windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sourdough Springs

Spring Sampling Point Description stock tank, discharge to tank out of a 1¼" pipe.

Spring Flow Rate (gpm) _____ (Volume: 1 L Time: 2:31 151 seconds.)

Water Quality

Sample Time: 17:15

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: E M. B

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:10		7.11	315	373	16.8	4.5	60%	
17:15								Collected WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Spring/ Lower Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/27/13 Photos (#,Name): 11-5

Weather: Sunny and hot

GPS Coord. (UTM 11N, NAD83)

Northing: 4033077 Easting: 464709

Spring Source Description Sourdough Springs

Spring Sampling Point Description Sourdough Springs Lower discharge into concrete stock tanks via ~2.0" pipe (lower flows). GPS pt "SorLowrSource" ~100' up grad. from discharge pt. Stock tanks isolated from ephemeral stream by brim.

Spring Flow Rate (gpm) 0.10 (Volume: 250 mL Time: 38 sec)

Water Quality

Sample Time: 18:30

Field Filtered? Y ___ N ___

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: Erik

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
18:25	250mL/38s	7.41	291	289	25.3	4.8	70%	
18:30								Sampled WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/27/13 Photos (#,Name): 9-3

Weather: Sunny / warm

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Whiskey Spring

Spring Sampling Point Description Discharge from u/1/4" pipe filling u/10' DIA stock tank consd. of XL tractor tire.

Spring Flow Rate (gpm) _____ (Volume: 1 L Time: 19.2 sec)

Water Quality

Sample Time: 15:45

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y X N _____

@ 15:55 "Whiskey Duplicate"

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:30	1L/19.2s	7.24	408	480	17.1	5.5	71%	dozen cows @ site
15:45								Sampled WQ
15:55								Sampled Duplicate

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/20/13 Photos (#,Name): 6-2

Weather: cloudy, cool, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs

Spring Sampling Point Description 2" discharge pipe filling stock tank South of Twin Springs campground.

Spring Flow Rate (gpm) _____ (Volume: 5 gal Time: 49.3 sec

Water Quality

Sample Time: 14:00

Field Filtered? Y ~~N~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:50	5gal/49.3s	7.47	333.0	412.0	~~5~~	7.6	89%	
14:00					14.9			Samples collected

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/20/13 Photos (#,Name): 7-2

Weather: partly cloudy, mod temps.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin springs Source

Spring Sampling Point Description North most stock tank, sampled from 1 1/2" discharge pipe that feeds tank. Cattle at tank upon arrival

Spring Flow Rate (gpm) _____ (Volume: 1 Liter Time: 10.1 Sec)

Water Quality

Sample Time: 15:00

Field Filtered? Y ~~N~~

Samples Filtered: _____

"Spring Equip. Blank" @ 15:20

Equip Blank Set Collected? Y X N _____

Transfer Blank Set Collected? Y X N _____

Duplicate Set Collected? Y _____ N X

"Spring Transfer Blank" @ 15:40

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:45	14/10.1 s	7.46	333.8	410.2	15.2	5.0	58%	
15:00								Collected Samples
15:20								Collected Equip Blank
15:40								*Collected Transfer Blank.

* Spring Transfer Blank, Green and Wht dot bottles to process as field filtered even though they were not (transfer)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Tank (upper) Page No.: 1 of 1

Personnel: Erik Bird

Date: 6/27/17 Photos (#,Name): 11-3

Weather: Sunny

GPS Coord. (UTM 11N, NAD83) updated as GrassyTank8 (GPS coord)

Northing: 4834102 Easting: 470447

Spring Source Description Grassy Spring

drip flow at 2 spots

Spring Sampling Point Description 1½" HDPE line broken above tank (steel)

in 50' East of broken concrete tanks (2)

Spring Flow Rate (gpm) drip < ¼ c/min (Volume:_____ Time:_____)

Water Quality

Sample Time: —

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y _____ N ✓

Transfer Blank Set Collected? Y _____ N ✓

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Negro Rock Canyon Creek. Page No.: 1 of 1

Sampling Location Name: Small waterfall @ Negro Rock Canyon Creek.

Personnel: Erik Bove

Date: 6/26/13 Photos (#,Name): 3-2

Weather: cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Notes sampled at small waterfall NKWTRFALL7 (GPS Coord)

Flow Rate: ~1 **Flow Rate Measurement Desc:** ~1 L/s, waterfall, visual est.

Flow Units: L/s

Water Quality

Sample Time: 12:00

Field Filtered? Y — N — per WP

Samples Filtered: — per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:30	6.86	394.6	482.3	15.4	4.2	49%	
12:06							Sampled WQ

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Dry Creek Arm Page No.: 1 of 1

Sampling Location Name: Dock @ dry creek arm of Owyhee

Personnel: Erik Bee

Date: 6/27/13 Photos (#,Name): 8-7

Weather: Sunny / warm

GPS Coord. (UTM 11N, NAD83) (Dry Crk Arm 8)

Northing: 4823307 Easting: 469153

Notes Re-GPS'd location, water receded since last time.

Flow Rate: _____ **Flow Rate Measurement Desc:** _____

Flow Units: _____

Water Quality

Sample Time: 14:20

Field Filtered? Y ~~N~~ per WP

Samples Filtered: per WP

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:50	8.74	229.5	243.0	22	8.5	113%	Re-receded since 1st dtr.
14:20							Sampled WQ

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Leslie Gulch Page No.: 1 of 1

Sampling Location Name: down gradient from concrete boat ramp

Personnel: Erik Boe

Date: 6/27/13 Photos (#,Name): 7-3

Weather: Sunny, clear skies

GPS Coord. (UTM 11N, NAD83)

Northing: 4796533 Easting: 473449

Notes Sampled ~ 300 ft down gradient from concrete boat ramp, reservoir receded.

Flow Rate: NA **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 9:00

Field Filtered? Y ____ N ____ per WP

Samples Filtered: ____ per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
8:50	8.08	330.4	349.7	22.1	8.0	99%	Calm water
9:00							WQ Samples Collected

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Owyee River Page No.: 1 of 1

Sampling Location Name: ~ 4mi north of dam

Personnel: Erik Boe

Date: 6/26/13 Photos (#,Name): 5-2

Weather: Overcast

GPS Coord. (UTM 11N, NAD83)

Northing: 4835877 Easting: 0480982

Notes Fly fisherman ~100 ft upstream of sampling site. Fisherman moved out of water, allowed to flow 10 min before sampling

Flow Rate: — **Flow Rate Measurement Desc:** —

Flow Units: —

Water Quality

Sample Time: 5:00 pm

Field Filtered? Y ____ N ____ per WP

Samples Filtered: ____ per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:50	8.67	187	239	13.3	10.7	116%	
17:00							Sampler Collected

Field Equipment Calibration Record

Instrument:	pH Meter
Manufacturer / Model:	YSI Ecosense pH100
Date / Time of Calibration:	6-18-13 9:15
Calibration Method:	2 - point
Buffers Used:	7 / 10
Slope Deviation:	—
Electrode Efficiency:	99.9
Successful Calibration?	✓ Yes ____ No
If No, List Corrective Action:	
Signature:	

Instrument:	Conductivity Meter
Manufacturer / Model:	YSI Ecosense EC300
Date / Time of Calibration:	6-18-13 9:25
Calibration Method:	known standard
Cell Constant:	5.00 Default? ✓ Yes ____ No
Temperature Coefficient:	1.91 % Default? ✓ Yes ____ No
Temperature Reference:	25 C Default? ✓ Yes ____ No
Conductivity Standard:	GeoTech standard
Conductivity Standard @ 25C:	1413 µS/cm
Successful Calibration?	✓ Yes ____ No
If No, List Corrective Action:	
Signature:	

Instrument:	Dissolved Oxygen Meter
Manufacturer / Model:	OxyGuard Handy Polaris 2
Date / Time of Calibration:	6-18-13 9:30
Calibration Method:	auto
Initial DO Saturation Reading:	98 (Should read 100.5%)
Calibration Needed?	____ Yes ✓ No
Calibration Precision:	✓ Field ____ Normal ____ High
Successful Calibration? NA	____ Yes ____ No
If No, List Corrective Action:	
Signature:	

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6-17-13 9:50
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 102.2
Successful Calibration? ✓ Yes _____ No
If No, List Corrective Action: _____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6-17-13 10:00
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes _____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes _____ No
Temperature Reference: 25.0 C Default? ✓ Yes _____ No
Conductivity Standard: GroTech standard
Conductivity Standard @ 25C: 1.413 mS
Successful Calibration? ✓ Yes _____ No
If No, List Corrective Action: _____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6-17-13 10:05
Calibration Method: auto
Initial DO Saturation Reading: 112 (Should read 100.5%)
Calibration Needed? ✓ Yes _____ No
Calibration Precision: ✓ Field _____ Normal _____ High
Successful Calibration? ✓ Yes _____ No reads 100 %
If No, List Corrective Action: _____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6-20-13 9:15
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 101.2 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6-20-13 9:20
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: Ge. Tech standard
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6-20-13 9:18
Calibration Method: auto
Initial DO Saturation Reading: 92 (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 100 %
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6/27/13 8:10
Calibration Method: 2 - point
Buffers Used: 7 & 10
Slope Deviation:
Electrode Efficiency: 95.6%
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6/27/13 8:20
Calibration Method: 1 point
Cell Constant: 4.83 Default? ____ Yes ____ No
Temperature Coefficient: ____ Default? ____ Yes ____ No
Temperature Reference: ____ Default? ____ Yes ____ No
Conductivity Standard: 1413 @ 25°C
Conductivity Standard @ 25C: 1413 @ 25°C
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6/27/13 8:25
Calibration Method: Auto Cal
Initial DO Saturation Reading: 101 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6/25/13 8:10
Calibration Method: 2 - point
Buffers Used: 7 & 10
Slope Deviation:
Electrode Efficiency: 95.1
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6/26/13 8:00
Calibration Method: 1 pt.
Cell Constant: 4.83 Default? ____ Yes ____ No
Temperature Coefficient: ____ Default? ____ Yes ____ No
Temperature Reference: ____ Default? ____ Yes ____ No
Conductivity Standard: 1413 @ 25°C
Conductivity Standard @ 25C: 1413 @ 25°C
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6/26/13 8:05
Calibration Method: Autocal
Initial DO Saturation Reading: 101 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Q3 2013

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Page No.: 1 of 1
Personnel: J Thompson E Boe
Date: 8-6-13
Photos (#,Name): Y
SPF Sounder #: SPF WL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4838778
Weather: Clear sunny
Easting: 470535
Wat Lev Transducer Download? Y _____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): 6
Type: Grundfos HP: 1.5
Well Casing Diam (in): 6
Setting Depth (ft): 147' blw toc
Surface Casing Height AGL (ft): 3'
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: Top of sounder coupler = 0.16' above well cap
Notes: new pump installed 3/13
Const Depth [ft, BMP]: 375
Water Quality
Locked? Y _____ N ✓
Sample Time: 11:30
Well Condition: good- lock needs repaired
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: per lab / metals
3x Casing Volume (gal): 1311
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 30 (10 sec)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 44
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:16	80.49							SWL
10:35		30						pump on water initially black
10:50	95.03	30	8.46	694	842	15.8	2.3 / 27%	water blackish
11:05	95.70	30	8.45	718	867	16.0	0.4 / 4%	water clearing - still grey
11:20	95.94	30	8.45	716	865	16.0	0.1 / 2%	water milky
11:30								collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4
Page No.: 1 of 1
Personnel: J Thompson E Boe
Date: 8-6-13
Photos (#,Name): 4
SPF Sounder #: SPF WL 300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4838740
Weather: clear sunny
Easting: 470557
Wat Lev Transducer Download? Y ✓ N _____

Well Description
Pump Description
Surface Casing Diam (in): 8
Permanent: ✓ Temporary: _____
Well Casing Diam (in): 4
Type: Grundfos HP: 1.5
Surface Casing Height AGL (ft): 2.52
Setting Depth (ft): 126
WL Meas Point Desc: top of sounder coupler = 0.20' blw top of surf casing
Drop Pipe Diam (in): 1.25
Const Depth [ft, BMP]: 370
Notes: new pump
Locked? Y ✓ N _____
Water Quality
Well Condition: good
Sample Time: 12:25
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: metals & per lab
3x Casing Volume (gal): 566
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 30 (LOS)
Transfer Blank Collected? Y ✓ N ~~X~~ OR
Required Purge Time (min): 19
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: _____
Mercury transfer blank collected 12:30

MST Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:21	82.30							SWL
11:47	83.07							SWL after purging PW-4
11:54		30						pump on - water clear
12:01	90.21	30	8.72	550	661	16.2	2.9/35%	water clear
12:08	90.48	30	8.74	551	662	16.3	1.0/11%	water cloudy
12:15	90.73	30	8.75	554	665	16.3	0.5/6%	water cloudy
12:25								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1
Page No.: 1 of 1
Personnel: J Thompson E Boe
Date: 8-6-13
Photos (#,Name): 4
SPF Sounder #: SPF WL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4835627
Weather: clear sunny
Easting: 471431
Wat Lev Transducer Download? Y _____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): NA
Type: Grundfos HP: 1.5?
Well Casing Diam (in): 6
Setting Depth (ft): unknown
Surface Casing Height AGL (ft): 3.4' AGS
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of well cap = 3.38' AGS
Notes: pump used for May 2012 installed in well?
Const Depth [ft, BMP]: 550'
Water Quality
Locked? Y ✓ N _____
Sample Time: 14:50
Well Condition: new cap on well
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: metals + per lab
3x Casing Volume (gal): 2193
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 30 (10s)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 73
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:05	57.15							SWL
13:20								pump on
13:23								pump out to fix hose
13:24		30						pump on - slightly muddy
13:44	115-1.07 (13:52)	30	7.91	308.1	346.8	19.1	4.6/60%	water clear
14:04	120-0.44	30	8.01	306.1	345.5	19.0	2.6/32%	water clear
14:24	125-0.24	30	8.02	307.1	346.9	19.0	2.3/29%	water clear
14:40	127.44	30	8.02	307.5	347.7	19.0	2.4/30%	water clear
14:50								collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson, E Boe

Date: 8/6/13

Photos (#,Name): 4

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835644

Weather: Sunny, warm

Easting: 421460

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 12

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3.5

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder cover = 3.68' AGS

Notes: near pump

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: 15:35

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals & per lab

3x Casing Volume (gal): 204

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 20 (15 sec)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 10

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:18	55.44							SWL
15:08	55.54							SWL after purging ~~end~~ PW-1
15:12		20						pump on - clear
15:18	67.71	20	7.68	337.1	405.0	16.2	5.2 / 71%	clear
15:22	67.88	20	7.72	337.5	405.2	16.2	5.4 / 64%	clear
15:26	68.23	20	7.73	337.4	405.1	16.2	5.2 / 62%	clear
15:35								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761
Personnel: J Thompson E Boe
Date: 8-6-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: hot + windy
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)
Northing: 4835286
Easting: 471532

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.5
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: new pump 3/13

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of sounder coupler = 0.19' blw top of surf casing
Const Depth [ft, BMP]: 118
Locked? Y ✓ N _____
Well Condition: good

Water Quality
Sample Time: 16:30
Field Filtered? Y ✓ N _____
Samples Filtered: Metals + per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 62
Flow Rate (gpm): 10 (30s)
Required Purge Time (min): 6

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:00	90-0.09							SWL
16:06								pump on
16:09	90.15	10	7.73	325.8	392.7	16.0	6.0 / 75%	water clear
16:12	90.15	10	7.68	324.3	393.7	15.8	6.4 / 76%	water clear
16:15	90.15	10	7.71	324.0	393.5	15.8	6.5 / 76%	clear
16:30								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson EDoc

Date: 8-7-13

Photos (#,Name): Y

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4833564

Weather: overcast + hot

Easting: 466562

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): NA

Type: Unknown HP: 1.0 from control box

Well Casing Diam (in): 12

Setting Depth (ft): 167?

Surface Casing Height AGL (ft): 6" = 0.53' blw drum top

Drop Pipe Diam (in): Unk

WL Meas Point Desc: top of 6' casing extension = 0.53'

Notes: existing pump in well

Const Depth [ft, BMP]: 482 blw top of drum at 3.2' AGS

Water Quality

Locked? Y _____ N ✓

Sample Time: 14:45

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals as per lab

3x Casing Volume (gal): 6633

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 15 (20 sec)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 442

Duplicate Set Collected? Y ✓ N _____

collected @ 14:55

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:30	110-2.25							SWL
12:40								pump on
13:10	130-1.52	15	8.54	338.4	370.5	20.4	1.4 / 17%	water clear
13:40	140-0.66	15	8.55	339.4	372.4	20.3	0.2 / 3%	water clear
14:10	145.27	15	8.54	341.6	374.6	20.4	0.3 / 4%	water clear
14:40	150-.58	15	8.52	344.1	378.6	20.5	0.4 / 6%	water clear
14:45								collect sample
14:55								duplicate

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Page No.: 1 of 1
Personnel: J Thompson
Date: 8-7-13
Photos (#,Name): Y
SPF Sounder #: SPF WL 300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4835105
Weather: hot & windy
Easting: 469094
Wat Lev Transducer Download? Y ____ N ✓

Well Description
Pump Description
Surface Casing Diam (in): 10
Permanent: ✓ Temporary: _____
Well Casing Diam (in): 6
Type: Grundfos HP: 0.75
Surface Casing Height AGL (ft): 2.92
Setting Depth (ft): 322
WL Meas Point Desc: top of sounder cable = 0.21' blw top of surface casing
Drop Pipe Diam (in): 1.25
Const Depth [ft, BMP]: 323
Notes: new installed 3/13
Locked? Y ✓ N _____
Water Quality
Well Condition: cone pad cracked
Sample Time: 17:00
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: Metals & per lab
3x Casing Volume (gal): 200
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 3 (1:40)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 67
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:35	280-0.03							Start
15:46		3						pump on - water milky
16:06	—	3	7.57	1621	1649	24.1	0.3 / 4%	slightly milky
16:26	—	3	7.64	1760	1782	24.4	0.5 / 6%	water clear
16:46	—	3	7.67	1728	1739	24.6	0.3 / 5%	water clear
16:56	—	3	7.68	1726	1739	24.6	0.5 / 6%	clear
17:00								sample collection

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Page No.: 1 of 1
Personnel: J Thompson
Date: 8-8-13
Photos (#,Name): Y
SPF Sounder #: SPFWL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4836380
Weather: overcast, warm
Easting: 469927
Wat Lev Transducer Download? Y _____ N ✓

Well Description
Pump Description
Surface Casing Diam (in): 8
Permanent: ✓ Temporary: _____
Well Casing Diam (in): 4
Type: Grundfos HP: 0.5
Surface Casing Height AGL (ft): 2.8
Setting Depth (ft): 42
WL Meas Point Desc: top of sounder coupler = 0.18' blw top of surf casing
Drop Pipe Diam (in): 1.25
Const Depth [ft, BMP]: 45
Notes: new pump
Locked? Y ✓ N _____
Water Quality
Well Condition: good
Sample Time: 8:52
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: Metals & per lab
3x Casing Volume (gal): 41
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 3 (1:40)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 14
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:05	30.67							SWL
8:32		3						pump on - sulfur odor - clear
8:37	—	3	6.40	691	862	14.7	2.7 / 31%	water slightly milky
8:42	36.32	3	6.52	718	883	15.3	2.6 / 29%	slightly milky
8:47	36.38	3	6.65	744	884	16.7	2.6 / 30%	slightly milky
8:52								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 8-8-13

SPF Sounder #: SPF WL 300-01

Sounder Correction:

Weather: cloudy + hot

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.9'

WL Meas Point Desc: top of sounder coupler = 0.22' blw top of surf casing

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): 224

Flow Rate (gpm): 26 (11s)

Required Purge Time (min): 9

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835229

Easting: 471504

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 0.75

Setting Depth (ft): 126

Drop Pipe Diam (in): 1.25

Notes: new pump 3/13

Water Quality

Sample Time: 10:55

Field Filtered? Y ✓ N ____

Samples Filtered: metals + per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:19	95.81							SWL
10:40		26						pump on - water clear
10:43	100.36	26	7.63	305.6	366.9	16.2	4.2/51%	clear
10:46	100.54	26	7.67	305.4	367.2	16.2	3.5/42%	clear
10:49	100.75	26	7.72	305.2	367.1	16.2	3.3/39%	clear
10:55								collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Page No.: 1 of 1
Personnel: J Thompson
Date: 8-8-13
Photos (#,Name): Y
SPF Sounder #: SPFWL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction:
Northing: 4835250
Weather: cloudy & hot
Easting: 471497
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: ____
Surface Casing Diam (in): 10
Type: unknown HP: unk
Well Casing Diam (in): 6
Setting Depth (ft): unk
Surface Casing Height AGL (ft): 3.3
Drop Pipe Diam (in): unk
WL Meas Point Desc: hole near top of casing = 3.1' AGS
Notes: existing pump in well
Const Depth [ft, BMP]: 203
Water Quality
Locked? Y ✓ N ____
Sample Time: 12:30
Well Condition: new cap installed
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: metals & per lab
3x Casing Volume (gal): 515
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 9 (33 sec)
Transfer Blank Collected? Y ~~✓~~ N ✓ ~~Mercury transfer collected @ 12:35~~ not collected - dropped bottle
Required Purge Time (min): 57
Duplicate Set Collected? Y ____ N ✓
Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:25	90-0.14							SWL
11:18	90.00							SWL after purging 59772
11:25		9						pump on - water clear
11:45	181.89	9	7.80	306.8	372.5	15.8	1.3 / 16%	clear
12:05	201.19	9	7.87	310.4	370.3	16.6	3.5 / 42%	slightly cloudy - DTW deeper than expected
12:25	190-1.67	9	7.84	309.8	366.4	16.9	6.3 / 76%	clear - DTW as expected
12:30								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM Well
Personnel: J Thompson
Date: SPF WL 300-01 → 8-8-13
SPF Sounder #:
Sounder Correction:
Weather: clear + hot
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)
Northing: 4833598
Easting: 470406

Well Description
Surface Casing Diam (in): —
Well Casing Diam (in): 6"
Surface Casing Height AGL (ft): 0.85'
WL Meas Point Desc: top of sounder coupler = 0.19' above 6" casing
Const Depth [ft, BMP]: 175
Locked? Y ✓ N ____
Well Condition: new cap

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.5
Setting Depth (ft): 168
Drop Pipe Diam (in): 1.25
Notes: new pump 3/13

Water Quality
Sample Time: 13:55
Field Filtered? Y ✓ N ____
Samples Filtered: metals & pH lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 82 (6x = 164)
Flow Rate (gpm): 5 (60s)
Required Purge Time (min): 16 for 3x 32 for 6X

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:12	156.44							SWL
13:20		5						pump on - water brown
13:31	162.16	5	7.62	1002	1209	16.1	0.6 / 7%	water clear
13:42	162.48	5	7.43	1381	1664	16.2	0.2 / 2%	water clear
13:53	162.81	5	7.31	1621	1949	16.2	0.2 / 2%	clear
13:55								collected sample after 6 casing volumes

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Personnel: Erik Boe

Date: 8/13/13

SPF Sounder #: NA

Sounder Correction: NA

Weather: Sunny, warm

Wat Lev Transducer Download? Y ____ N X

Well Description

Surface Casing Diam (in): ____

Well Casing Diam (in): ____

Surface Casing Height AGL (ft): ____

WL Meas Point Desc: ____

Const Depth [ft, BMP]: ____

Locked? Y ____ N ____

Well Condition: good.

Casing Purge

3x Casing Volume (gal): NA, flowing

Flow Rate (gpm): 1 L/12.0 sec = 1.32 gpm

Required Purge Time (min): NA

Sampler Signature: E.T.

Page No.: 1 of 1

Photos (#,Name): 1-2

GPS Coord. (UTM 11N, NAD83)

Northing: same

Easting: same

Pump Description

Permanent: X Temporary: ____

Type: — HP: —

Setting Depth (ft): —

Drop Pipe Diam (in): —

Notes: —

Water Quality

Sample Time: 10:55

Field Filtered? Y ____ N ____ Per W.P.

Samples Filtered: Per W.P.

Equip Blank Collected? Y ____ N X

Transfer Blank Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:30	flowing	1L/12.0 s						
10:35			8.07	564	640	18.1	0.9 / 12%	
10:55								collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/13/13 Photos (#,Name): 2-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Unknown spring source.

Spring Sampling Point Description discharge from ~2" pipe that feeds the Deposit Stock Tank

Spring Flow Rate (gpm) 0.116 gpm (Volume: 500 mL Time: 68.5 sec)

Water Quality

Sample Time: 12:00

Field Filtered? Y ~~N~~ Per W.P.

Samples Filtered: Per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20	500mL / 68.5s							water is clear & clear
11:25		7.22	548	529	26.1	4.1	60%	*
12:00								Collected Sample/.

*note: Pipe is very loose where it meets the ground. Had to tighten the tie-wire to obtain samplable flow.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: E. Boe, J. Thompson

Date: 8/7/13 Photos (#,Name): 2-2

Weather: partly cloudy, warm

GPS Coord. (UTM 11N, NAD83)

Northing: 4838649 Easting: 472953

Spring Source Description Government Corral Spring Source.

Spring Sampling Point Description Upper most stock tank. Spring discharge from ~1 1/4" pipe to tank. Overflow fills second tank.

Spring Flow Rate (gpm) 1.35 (Volume: 1 Liter Time: 11.78 sec)

Water Quality

Sample Time: 11:35

Field Filtered? Y — N — per W.P.

Samples Filtered: — per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:15	1 L/11.78 sec							clear, no odor.
11:20		7.64	374.8	422.3	19.1	7.1	92 %	
11:35								Collected Samples.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring. Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/7/13 Photos (#,Name): 7-2

Weather: Overcast, rain in distance.

GPS Coord. (UTM 11N, NAD83)

Northing: 4834102 Easting: 0470447

Spring Source Description Grassy Spring Source.

Spring Sampling Point Description Upper stock tank, w/ 1½" HDPE line broken n 1.5' from tank. Drip flow, puddle of mud on East side of tank.

Spring Flow Rate ~~(gpm)~~ 0.054 $\frac{L}{min}$ (Volume: 50 mL Time: 55.9 sec)

= 0.014 gpm

Water Quality

Sample Time: NA ($Q < 0.25 \frac{L}{min}$)

~~Field Filtered?~~ Y_____ N_____

~~Samples Filtered:~~

~~Equip Blank~~ Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

~~Duplicate~~ Set Collected? Y_____ N_____

Sampler Signature:

Time	[L/min] Flow Rate ~~[gpm]~~	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:50	0.054							Since Q = < 0.25 L/min
								no WQ samples
								@ ~~G~~ Grassy
								Spring Site.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/13/13

Photos (#,Name): 3-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: Same

Easting: Same

Spring Source Description Lowe Spring

Spring Sampling Point Description End of ~1 1/4" HDPE line that feeds puddle.

Spring Flow Rate (gpm) 0.012 gpm (Volume: 46 mL Time: 60 sec)

= 0.046 L/min

Water Quality

Sample Time: NA

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____ NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate ~~[gpm]~~ mL/min	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:55	46 mL/60 s							Q = < 1/4 L/min
								∴ no samples
								collected

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Erik Roe

Date: 8/13/13 Photos (#,Name): 5-1

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Poison Spring

Spring Sampling Point Description Water flowing from crack in 2'x2' concrete well/structure

Spring Flow Rate (gpm) NA (Volume: — Time: —)

Water Quality

Sample Time: 16:40

Field Filtered? Y ~~N~~ Per W.P.

Samples Filtered: Per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.R.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:56		9.36	493	517	22.5	1.8	25%	concrete well full, flowing
~~16:40~~								out crack. Floaties
								in water.
16:40								Collected WQ
								Samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/13/13 Photos (#,Name): 4-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Sagebrush Spring source

Spring Sampling Point Description Discharge from ~1½" pipe into fiberglass stock tank. Upper most tank, above the 2 concrete tanks that are dry.

Spring Flow Rate (gpm) 0.440 gpm (Volume: 1L Time: 36.0 s)

Water Quality

Sample Time: 13:40

Field Filtered? Y ~~N~~ per W.P.

Samples Filtered: per W.P.

Equip Blank Set Collected? Y X N

Transfer Blank Set Collected? Y X N

Duplicate Set Collected? Y X N

"Sagebrush Dup" @ 13:50

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:20	14/36s	7.39	339	389	17.7	6.2	85%	clear, no odor
13:40								*Collected samples
13:50								*Collected Duplicate
14:20								Collect Equipment ~~Transfer~~ Blank
14:30								Collected Spring Transfer Blank
14:45								Collected Mercury transfer trip Blank

* multiple cows nearby kicking up dust.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Spring Lower Page No.: 1 of 1

Personnel: Erik Bae

Date: 8/14/13 Photos (#,Name): 2-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Sourdough Spring Lower Source

Spring Sampling Point Description 2" discharge pipe that feeds the upper of 2 tanks in series. Relatively low trickle flow

Spring Flow Rate (gpm) 0.066 gpm (Volume: 250 mL Time: 60 sec)

Water Quality

Sample Time: 12:00

Field Filtered? Y ~~N~~ Per W.P.

Samples Filtered: ~~Per W.P.~~

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.

Time	Flow Rate ~~[gpm]~~	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:15	250mL/min							@ min flow for
11:35		7.54	371	363	26.0	5.9	87%	sampling.
12:00								Collected Samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Spring Upper Page No.: 1 of 1

Personnel: Erik Bob

Date: 8/14/13 Photos (#,Name): ~~1-2~~ 1-3

Weather: Sunny, warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Sourdough spring upper source

Spring Sampling Point Description Discharge from ~~1~~ 1½" pipe into stock tank. Only drip/trickle flow.

Spring Flow Rate (~~gpm~~ mL/min) 120 mL/min (Volume: 120 mL Time: 60s)

= 0.032 gpm

Water Quality

Sample Time: NA

Field Filtered? Y ~~N~~

Samples Filtered:

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	~~gpm~~ mL/min Flow Rate	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:40	120 mL/min							Q < 250mL/min
								∴ no samples
								collected

Note: drip/trickle flow running along pipe surface before falling into tank See pictures.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/14/13 Photos (#,Name): 6-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Twin Springs Source

Spring Sampling Point Description Discharge from ~1½" pipe into the northern most stock tank @ Twin Springs.

Spring Flow Rate (gpm) 1.45 gpm (Volume: 2 gal Time: 83.0sec)

Water Quality

Sample Time: 16:00

Field Filtered? Y ___ N Per W.P.

Samples Filtered: ___ Per W.P.

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Collected Mercury Trip Transfer Blank @ 16:05

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:35	1.45	7.41	406	456	19.1	3.6	46%	clear, no odor
16:00								Collected Sample
16:05								Mercury Trip Transfer Blank.

Notes: dozen cows and large bull kicking up dust (down wind)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/14/13 Photos (#,Name): 5-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Twin Springs Source.

Spring Sampling Point Description Discharge into Southern most stock tank via ~1½" pipe.

Spring Flow Rate (gpm) 5.8 gpm (Volume: 3 gal Time: 31.0 sec)

Water Quality

Sample Time: 15:15

Field Filtered? Y — N Per W.P.

Samples Filtered: — Per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:45	5.8	7.56	387	461	16.8	7.2	89%	clear, no odor
15:15								Collected Samples

Notes: Couple cows at site. Water over flowing to twin springs creek.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 8/14/13 Photos (#,Name): 4 3-2

Weather: Sunny and warm

GPS Coord. (UTM 11N, NAD83)

Northing: Same Easting: Same

Spring Source Description Whiskey Spring source.

Spring Sampling Point Description Discharge from ~1½" pipe filling the ~10' DIA stock tank (tractor tire)

Spring Flow Rate (gpm) 0.881 gpm (Volume: 1 L Time: 18 sec)

Water Quality

Sample Time: 13:55

Field Filtered? Y ___ N — Per W.P.

Samples Filtered: — per W.P

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: [signature]

Time	Flow Rate ~~[gpm]~~	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:30	14/18s	7.60	494	556	19.0	5.5	74%	clear, no odor.
13:55								Collected Samples

Notes: +dozen cattle @ site. Both lower ponds are dry.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: Erik Bop

Date: 8/7/13

SPF Sounder #: SPF-WL300-01

Sounder Correction: _____

Weather: Overcast

Wat Lev Transducer Download? Y X N _____

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: _____

Const Depth [ft, BMP]: _____

Locked? Y X N _____

Well Condition: _____

~~Casing Purge~~

~~3x Casing Volume (gal):~~ _____

~~Flow Rate (gpm):~~ _____

~~Required Purge Time (min):~~ _____

Page No.: 1 of 1

Photos (#,Name): ~~X~~ 6-3

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

~~Pump Description~~ NA

~~Permanent:~~ _____ ~~Temporary:~~ _____

~~Type:~~ _____ ~~HP:~~ _____

~~Setting Depth (ft):~~ _____

~~Drop Pipe Diam (in):~~ _____

~~Notes:~~ _____

~~Water Quality~~ NA

~~Sample Time:~~ _____

~~Field Filtered?~~ Y _____ N _____

~~Samples Filtered:~~ _____

~~Equip Blank Collected?~~ Y _____ N _____

~~Transfer Blank Collected?~~ Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:30	165-0.39							Downloaded Levelogger
								data and reset to
								30min sample rate,
								(was @ 1 hr)

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 8-8-13

SPF Sounder #: SPF WL300-01

Sounder Correction: _____

Weather: cloudy + hot

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25

WL Meas Point Desc: top of 2" pipe = 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 0468001

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:40	57.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 8-8-13

SPF Sounder #: SPF WL300-01

Sounder Correction: _____

Weather: Overcast, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): 45 N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 0470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top of surface casing (marked)

Const Depth [ft, BMP]: 350

Locked? Y _____ N _____

Well Condition: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:24	227.33							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 8-8-13

Photos (#,Name): N

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835616

Weather: Overcast, hot

Easting: 0468339

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.23'

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 2" pipe, 2.13' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:28	140.81							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 8-8-13

Photos (#,Name): N

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835556

Weather: overcast, warm

Easting: 471320

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41'

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 2" = 2.10' AGS

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____ 3400

Sample Time: _____

Well Condition: bent seal cracked at surface

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:59	77.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762
Page No.: 1 of 1

Personnel: J Thompson
Date: 8-8-13
Photos (#,Name): N

SPF Sounder #: SPF WL1000-01
Sounder Correction: _____

GPS Coord. (UTM 11N, NAD83)
Northing: 4935714
Easting: 0470996

Weather: overcast, warm
Wat Lev Transducer Download? Y _____ N ✓

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.77'
WL Meas Point Desc: top of 4" pipe = 2.4' AGS
Const Depth [ft, BMP]: 700
Locked? Y _____ N _____
Well Condition: good

Pump Description
Permanent: _____ Temporary: _____
Type: _____ HP: _____
Setting Depth (ft): _____
Drop Pipe Diam (in): _____
Notes: _____

Casing Purge
3x Casing Volume (gal): _____
Flow Rate (gpm): _____
Required Purge Time (min): _____

Water Quality
Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____
Equip Blank Collected? Y _____ N _____
Transfer Blank Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:40	620-0.89							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: Erik Boe

Date: 8/7/13

SPF Sounder #: SPF-WL300-01

Sounder Correction: _____

Weather: Sunny, warm

Wat Lev Transducer Download? Y _____ N X

Well Description

Surface Casing Diam (in): 8 in

Well Casing Diam (in): 4 in

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: _____

Const Depth [ft, BMP]: _____

Locked? Y X N _____

Well Condition: _____

Casing Purge

3x Casing Volume (gal): NA

Flow Rate (gpm): NA

Required Purge Time (min): NA

Page No.: 1 of 1

Photos (#,Name): 4 - 1

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

~~Pump Description~~ None, MW

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

~~Water Quality~~ NA

Sample Time: _____

Field Filtered? ~~Y~~ _____ ~~N~~ _____

Samples Filtered: _____

Equip Blank Collected? ~~Y~~ _____ ~~N~~ _____

Transfer Blank Collected? ~~Y~~ _____ ~~N~~ _____

Duplicate Set Collected? ~~Y~~ _____ ~~N~~ _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:42	273.08							SWL, MP= Top of
								4in PVC. Marked.
								Note: SWL taking before
								59763 pump turned
								on.

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 8-6-13 / 10 AM
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: –
Electrode Efficiency: 100.6 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 8-6-13 10:05
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.917.25 C Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ____ Yes ____ No
Conductivity Standard: 1413 uS/cm May 2015 GeoTech
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8-6-13 10:08
Calibration Method: auto
Initial DO Saturation Reading: 98 % (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No 100 %
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 8-7-13 10:10
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 100.5 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 8-7-13 10:15
Calibration Method: known standard
Cell Constant: 5.16 Default? ✓ Yes ____ No
Temperature Coefficient: 1.912 Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: CerTech 1413 mS/cm May 2015
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8-7-13 10:20
Calibration Method: automatic
Initial DO Saturation Reading: 96 % (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 101 %
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 8-8-13 8:10
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 100.5 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 8-8-13 8:15
Calibration Method: known standard
Cell Constant: 5.16 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: GeoTech 1413 uS/cm
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8-8-13 8:20
Calibration Method: automatic
Initial DO Saturation Reading: 97 % (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 101 %
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 8/13/2013 9:45
Calibration Method: 2 - point
Buffers Used: 7 and 10
Slope Deviation:
Electrode Efficiency: 99.4%
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 8/13/2013 10:00
Calibration Method: 1 pt.
Cell Constant: 5.00 Default? X Yes ____ No
Temperature Coefficient: ____ Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: Calibrated w/ SC.
Conductivity Standard @ 25C: 1413
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8/13/2013 10:10
Calibration Method: % to Air
Initial DO Saturation Reading: 100 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 8/14/13 9:45
Calibration Method: 2 - point
Buffers Used: 7 & 10 pH Std.
Slope Deviation:
Electrode Efficiency: 99.1 %
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 8/14/13 9:55
Calibration Method: 1 pt.
Cell Constant: 5.00 Default? X Yes ____ No
Temperature Coefficient: ____ Default? X Yes ____ No
Temperature Reference: 25°C Default? X Yes ____ No
Conductivity Standard: Calibrated w/ SC.
Conductivity Standard @ 25C: 1413
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8/14/13 10:15
Calibration Method: 1 pt, % to Air
Initial DO Saturation Reading: 100 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Q4 2013

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-21-13

Photos (#,Name): Y

SPF Sounder #: SPF WL300-01

GPS Coord. (UTM 11N, NAD83)

Northing: 4835644

Sounder Correction: _____

Easting: 421410

Weather: Clear + cold

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 12

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3.5

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder cover = 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: 15:35

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals + per lab

3x Casing Volume (gal): 204

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 20 (15s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 10

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:12	55.58							SWL SWL @ 15:10 = 55.70
15:15								~~Start~~ pump on
15:18	56.37	20	7.96	333.2	401.6	16.1	7.5 / 82%	~~pump on~~ clear
15:21	56.57	20	7.95	333.3	401.3	16.1	6.5 / 73%	clear
15:~~24~~ 24	56.81	20	7.95	333.1	401.1	16.1	6.0 / 68%	clear
15:28	57.00	20	7.95	333.1	401.0	16.1	6.0 / 68%	clear
15:35								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-21-13

Photos (#,Name): Y

SPF Sounder #: SPF 62 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4838740

Weather: clear & cold

Easting: 470557

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ✓ Temporary: ____

Surface Casing Diam (in): 8

Type: Grundfos HP: 1.5

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler = 0.20' below top of steel casing

Notes: new pump

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N ____

Sample Time: 12:10

Well Condition: good

Field Filtered? Y ✓ N ____

Casing Purge

Samples Filtered: metals / perlab

3x Casing Volume (gal): 566

Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 30 (105)

Transfer Blank Collected? Y ____ N ✓

Required Purge Time (min): 19

Duplicate Set Collected? Y ✓ N ____ 12:25 GW-4-DUP

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:50	82.36							SWL after transducer removed
11:38	82.84							SWL
11:45								pump on slightly cloudy
11:51	90.64	30	8.98	542	655	15.9	5.3 / 56%	water cloudy
11:57	91.11	30	8.96	542	654	16.1	0.6 / 7%	water cloudy
12:03	91.33	30	8.96	544	656	16.1	0.4 / 4%	cloudy
12:04	—	30	8.96	545	656	16.1	0.3 / 4%	cloudy
12:10								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod 1

Personnel: Erik Bae

Date: 11/22/13 13:06

SPF Sounder #: NA

Sounder Correction: NA

Weather: Sunny, Cool, no wind

Wat Lev Transducer Download? Y ~~N~~

Page No.: 1 of 1

Photos (#,Name): 5-2

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Well Description

Surface Casing Diam (in): no change

Well Casing Diam (in):

Surface Casing Height AGL (ft):

WL Meas Point Desc:

Const Depth [ft, BMP]:

Locked? Y N

Well Condition:

Pump Description

Permanent: Temporary: NA, flowing artesian

Type: HP:

Setting Depth (ft): Assuming steady-state conditions.

Drop Pipe Diam (in):

Notes:

Water Quality

Sample Time: 13:10

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Collected? Y N X

Transfer Blank Collected? Y N X

Duplicate Set Collected? Y N X

Casing Purge

3x Casing Volume (gal): NA

Flow Rate (gpm): Flowing, Q = 1.31 gpm

Required Purge Time (min):

Sampler Signature: E.T.

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:05	Flowing	12.15	8.39	517	619	17.4	3.2 / 36%	meas. params.
13:10								sampled WQ

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1
Personnel: J Thompson
Date: 11-21-13
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: clear & cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)
Northing: 4835627
Easting: 471431

Well Description
Surface Casing Diam (in): NA
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.4' AGS
WL Meas Point Desc: top of well cap = 3.38' AGS
Const Depth [ft, BMP]: 550'
Locked? Y ✓ N _____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: grundfos HP: 1.5?
Setting Depth (ft): Unknown
Drop Pipe Diam (in): 1.25
Notes: _____

Casing Purge
3x Casing Volume (gal): 2193
Flow Rate (gpm): 30 (10s)
Required Purge Time (min): 73

Water Quality
Sample Time: 14:50
Field Filtered? Y ✓ N _____
Samples Filtered: Metals & per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:08	5696							SWL
13:25								pump on
13:45	115-1.19	30	8.26	303.2	343.7	18.8	4.2 / 50%	water clear
14:05	125-.05	30	8.24	302.6	342.9	18.9	2.7 / 32%	water clear
14:25	130-.27	30	8.20	303.3	344.0	18.8	2.9 / 35%	clear
14:40	132.78	30	8.20	303.7	344.7	18.8	3.0 / 37%	
14:50		30						collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 11-21-13
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: clear + cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y
GPS Coord. (UTM 11N, NAD83)
Northing: 4938778
Easting: 470535

Well Description
Surface Casing Diam (in): 6
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of sounder cord 6r = 0.16' above well cap
Const Depth [ft, BMP]: 375
Locked? Y _____ N ✓
Well Condition: good - lock broken

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 1.5
Setting Depth (ft): 147' blw TOC
Drop Pipe Diam (in): 1.25
Notes: _____

Casing Purge
3x Casing Volume (gal): 1311
Flow Rate (gpm): 30 (10s)
Required Purge Time (min): 44

Water Quality
Sample Time: 10:55
Field Filtered? Y ✓ N _____
Samples Filtered: metals per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:37	80.60							SWL
10:06				663				pump on - water black
10:21	95.94	30	8.83	~~663~~	812	15.6	1.2 / 13%	water still blackish-grey
10:36	96.72	30	8.73	695	845	15.7	0.2 / 3%	water grey-black
10:51	97.19	30	8.71	693	840	15.8	0.1 / 2%	water grey black
10:55								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Page No.: 1 of 1
Personnel: J Thompson
Date: 11-24-13
Photos (#,Name): Y
SPF Sounder #: SPF WL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4835250
Weather: clear + cool
Easting: 471491
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): 10
Type: unknown HP: unk
Well Casing Diam (in): 6
Setting Depth (ft): unk
Surface Casing Height AGL (ft): 3.3
Drop Pipe Diam (in): unk
WL Meas Point Desc: hole near TOC = 3.1' AGS
Notes: _____
Const Depth [ft, BMP]: 203
Water Quality
Locked? Y ✓ N _____ 3690
Sample Time: 14:10
Well Condition: new well cap
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: metals / per lab
3x Casing Volume (gal): 515
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 9 (33 sec)
Transfer Blank Collected? Y ✓ N ____ Mercury transfer blank @ 14:00
Required Purge Time (min): 57
Duplicate Set Collected? Y ____ N ✓
Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:12	90.06							SWL
13:01	90.18							SWL
13:07								pump on / water clear
13:27	145.82	9	7.88	307.3	372.2	15.8	0.8 / 10%	water little cloudy (air?)
13:47	180.74	9	7.89	306.4	369.1	16.1	2.1 / 24%	water cloudy (air?)
14:07	192.17	9	7.90	302.1	362.7	16.3	3.6 / 41%	slightly cloudy
14:10								sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761
Personnel: J Thompson
Date: 11-21-13
SPF Sounder #: SPF WL300-01
Sounder Correction: _____
Weather: clear & cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y
GPS Coord. (UTM 11N, NAD83)
Northing: 4835286
Easting: 471532

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of sounder coupler = 0.19' below top of steel casing
Const Depth [ft, BMP]: 118
Locked? Y ✓ N _____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.5
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: _____

Casing Purge
3x Casing Volume (gal): 62
Flow Rate (gpm): 10 (30s)
Required Purge Time (min): 6

Water Quality
Sample Time: 16:25
Field Filtered? Y ✓ N _____
Samples Filtered: metals & gen lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:08	90-0.06							SWL
16:15								pump on
16:17	90.04	10	7.95	320.3	391.6	15.5	8.4 / 94%	clear
16:19	90.06	10	7.95	320.7	391.1	15.6	7.9 / 89%	clear
16:21	90.08	10	7.94	320.5	390.9	15.6	7.7 / 87%	clear
16:25								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Personnel: J Thompson

Date: 11-24-13

SPF Sounder #: SPF WL300-01

Sounder Correction: _____

Weather: Clear & cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8'

WL Meas Point Desc: top of coupler = 0.18' below top of surface casing

Const Depth [ft, BMP]: 45

Locked? Y ✓ N _____ 3246

Well Condition: good

Casing Purge

3x Casing Volume (gal): 41

Flow Rate (gpm): 3 (1:40)

Required Purge Time (min): 14

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): 4

GPS Coord. (UTM 11N, NAD83)

Northing: 483380

Easting: 469927

Pump Description

Permanent: ✓ Temporary: _____

Type: Grundfos HP: 0.5

Setting Depth (ft): 42

Drop Pipe Diam (in): 1.25

Notes: _____

Water Quality

Sample Time: 11:35

Field Filtered? Y ✓ N _____

Samples Filtered: metals & per lab

Equip Blank Collected? Y _____ N ✓

Transfer Blank Collected? Y _____ N ✓

Duplicate Set Collected? Y _____ N ✓

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:59	31.02							SWL
11:15								pump on - sulfur smell, water brownish
11:20	36.31	3	6.52	675	853	14.0	64 / 65%	water clearer
11:25	36.41	3	6.53	678	859	14.0	3.4 / 37%	clearer
11:30	36.42	3	6.61	693	875	14.2	2.5 / 28%	clear
11:35								sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772
Page No.: 1 of 1
Personnel: J Thompson
Date: 11-24-13
Photos (#,Name): 4
SPF Sounder #: SPFWL300-01
Sounder Correction:
Weather: clear + cold
Wat Lev Transducer Download? Y ____ N ✓

GPS Coord. (UTM 11N, NAD83)
Northing: 4835229
Easting: 471504

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.9'
WL Meas Point Desc: top of coupler = 0.22' below top of steel casing
Const Depth [ft, BMP]: 207
Locked? Y ✓ N ____ 3246
Well Condition: conc pad cracked

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 126
Drop Pipe Diam (in): 1.25"
Notes:

Water Quality
Sample Time: 12:40
Field Filtered? Y ✓ N ____
Samples Filtered: metals / per lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 224
Flow Rate (gpm): 26 (115)
Required Purge Time (min): 9

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:05	96.05							SWL
12:25								pump on - clear
12:28	101.75	26	7.67	304.1	367.0	16.0	7.8/87%	water clear
12:31	101.80	26	7.78	303.9	366.7	16.0	5.6/63%	clear
12:34	101.87	26	7.84	303.7	366.3	16.1	4.0/46%	clear
12:40								sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop
Personnel: 11-25-13 J Thompson
Date: ↓
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: clear, cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): 4

GPS Coord. (UTM 11N, NAD83)
Northing: 4833564
Easting: 466562

Well Description
Surface Casing Diam (in): NA
Well Casing Diam (in): 12
Surface Casing Height AGL (ft): top of 6" casing extension = 0.53' blw top of dome @ 3.2' AGS
WL Meas Point Desc: 6" = 1.53' blw TOC
Const Depth [ft, BMP]: 482
Locked? Y _____ N ✓
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: unk HP: 1.0
Setting Depth (ft): 167?
Drop Pipe Diam (in): unk
Notes: existing pump in well

Water Quality
Sample Time: 11:35
Field Filtered? Y ✓ N _____
Samples Filtered: metals + per lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 6633
Flow Rate (gpm): 15 (20s)
Required Purge Time (min): 442 purge for 2 hrs

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:19	110-1.49							SWL
9:30								pump on - water clear
10:00	135-.73	15	8.51	343.1	384.6	19.2	4.6 / 52%	clear
10:30	146.62	15	8.53	347.2	389.1	19.4	1.0 / 12%	clear
11:00	152.40	15	8.51	346.4	387.9	19.4	1.2 / 15%	clear
11:30	155.57	15	8.47	351.9	393.7	19.3	1.5 / 18%	clear
11:35								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Personnel: J Thompson
Date: 11-24-13
SPF Sounder #: SPFWL300-01
Sounder Correction: _____
Weather: clear + cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y
GPS Coord. (UTM 11N, NAD83)
Northing: 4835105
Easting: 469094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 2.92
WL Meas Point Desc: top of coupler = 0.21' blw top of surf casing
Const Depth [ft, BMP]: _____
Locked? Y ✓ N _____ 3246
Well Condition: cone pad cracked

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.75
Setting Depth (ft): 322
Drop Pipe Diam (in): 1.25
Notes: _____

Water Quality
Sample Time: 17:10
Field Filtered? Y ✓ N _____
Samples Filtered: Metals + NH3 lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 200
Flow Rate (gpm): 3 (1:40)
Required Purge Time (min): 67

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:48	280-.13							SWL
15:57								pump on - water clear
16:17	—	3	7.67	1442	1522	23.6	0.2 / 3%	clear
16:37	—	3	7.72	~~1575~~	1584	23.9	0.6 / 8%	clear
16:57	—	3	7.77	153 / 1631	1670	23.9	0.8 / 10%	clear
17:05	—	3	7.74	1639	1673	24.0	0.8 / 11%	clear
17:10								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM
Personnel: J Thompson
Date: 11-24-13
SPF Sounder #: SPF WL 300-01
Sounder Correction: _____
Weather: clear + cold
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): Y
GPS Coord. (UTM 11N, NAD83)
Northing: ~~4835588~~ 4835898
Easting: 470406

Well Description
Surface Casing Diam (in): —
Well Casing Diam (in): 6"
Surface Casing Height AGL (ft): 0.85'
WL Meas Point Desc: top of coupler = 0.19' above TOC
Const Depth [ft, BMP]: 175
Locked? Y ✓ N _____
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.5
Setting Depth (ft): 168
Drop Pipe Diam (in): 1.25
Notes: _____

Casing Purge
3x Casing Volume (gal): 82 (6x = 164)
Flow Rate (gpm): 5 (60s)
Required Purge Time (min): 32

Water Quality
Sample Time: 15:25
Field Filtered? Y ✓ N _____
Samples Filtered: Metals & per 16b
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:42	156.60							SWL
14:46								pump on - initially brown
14:57	162.63	5	7.69	1060	1294	15.7	0.2 / 2%	water cloudy - air?
15:08	162.81	5	7.46	1450	1761	15.7	0.1 / 1%	water clear
15:19	163.54	5	7.29	1719	2087	15.8	0.1 / 1%	clear
15:25								sampled

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 11-21-13

SPF Sounder #: SPFWL300-01

Sounder Correction: _____

Weather: clear + cold

Wat Lev Transducer Download? Y ✓ N _____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.2

WL Meas Point Desc: top of casing 4" = 2.04' AGS

Const Depth [ft, BMP]: 325

Locked? Y ✓ N _____ 0616

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): 4

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 0470397

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:08	165-044							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 11-25-13

SPF Sounder #: SPFWL300-01

Sounder Correction: _____

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 0470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top of surface casing (marked)

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____ 0502

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:27	22.40							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 11-25-13

SPF Sounder #: SPFWL300-01

Sounder Correction: _____

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835616

Easting: 0468339

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73'

WL Meas Point Desc: top of 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N _____ 0616

Well Condition: conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:08	14.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 11-25-13

SPF Sounder #: SPF WL 300-01

Sounder Correction: _____

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 0468001

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top of 2" @ 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____ 3400

Well Condition: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:52	57.67							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 11-25-13

SPF Sounder #: SPF WL1000-01

Sounder Correction: Y

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 0470996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77'

WL Meas Point Desc: top of 4" = 2.4' AGS

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____ 3246

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:47	620-.72							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 11-24-13

SPF Sounder #: SPFWL300-01

Sounder Correction: _____

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 0469034

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8'

WL Meas Point Desc: top of 4" 2.2' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____ 3246

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Pump Description

Permanent: _____ Temporary: _____

Type: / HP: _____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: _____

Water Quality

Sample Time: /

Field Filtered? Y / N _____

Samples Filtered: /

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y / N _____

Duplicate Set Collected? Y / N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:52 ~~14.52~~	273.23							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: J Thomson

Date: 11-25-13

SPF Sounder #: SPF WL300-01

Sounder Correction: _____

Weather: clear, cold

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4835556

Easting: 471320

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.41'

WL Meas Point Desc: top of 2" = 2.10' AGS

Const Depth [ft, BMP]: 915

Locked? Y ✓ N _____ 3400

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:04	77.34							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Bop

Date: 11/22/13 12:10 Photos (#,Name): 4-3

Weather:

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description unknown source.

Spring Sampling Point Description Discharge from ~1½" pipe into large diameter stock tank, the western most stock tank.

Spring Flow Rate (gpm) 0.25 gpm (Volume: 1L Time: 63 sec)

Water Quality

Sample Time: 12:20

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:15	1L/63s	7.69	313	488	6.2	6.7	60%	meas. parameters.
12:20								collected WQ

Note: Orphee DS Mercury was found in ice chest, call ACZ and send in next batch to ACZ, well within time limit.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/22/13 10:35 Photos (#,Name): 2-5

Weather: sunny, cold, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Gov't corral spring source.

Spring Sampling Point Description Sampled from upper most stock tank, discharge from ~1½" pipe into tank.

Spring Flow Rate (gpm) 1.55 gpm (Volume: 1L Time: 10.2 sec)

Water Quality

Sample Time: 10:55

Field Filtered? Y ~~N~~ N

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	1L/10.2s	7.96	297	415	10.2	9.1	91 %	meas. parameters
10:55								collected WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 16:30

Photos (#,Name): 9-4

Weather: overcast / cold

GPS Coord. (UTM 11N, NAD83)*

Northing: 4834104

Easting: 470451

*@ pt where water is dripping

Spring Source Description S grassy spring source.

Spring Sampling Point Description Water dripping from broken ~1/4" HDPE line. Approx 2' up grad from tank. water (muddy) all around perimeter of tank, primarily on NE side. trampled by cattle, game animals.

Spring Flow Rate (gpm) 0.016 gpm (Volume: 60 mL Time: 60 sec)

$\left(\frac{0.060\ L}{60\ s}\right)\left(\frac{15.85\ gpm}{4\ L/s}\right)$

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:30	60 mL/60s							drip/trickle flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/22/13 11:30 Photos (#,Name): 3-4

Weather: Sunny, cool, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Lowe spring

Spring Sampling Point Description End of broken ~~cut bank~~ excavated cut bank. Frozen water in ponding area (see pics)

Spring Flow Rate (gpm) 0.023 gpm (Volume: 125 mL Time: ~~1:27 sec~~ 87 sec)

Water Quality Q = < $\frac{1}{4}$ L/min

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N _____

Transfer Blank Set Collected? Y ____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:35	125 mL ~~1:27 sec~~ 87 sec							measured Q
								flow is < $\frac{1}{4}$ L/min
								∴ no samples.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/21/13 13:30 Photos (#,Name): 7-3

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Poison Springs, ~~flow out of crack in ~2'x2' concrete well~~

Spring Sampling Point Description Sampled from water flowing from crack in 2'x2' concrete well.

Spring Flow Rate (gpm) ~~NA~~ ~1 gpm (Volume: ~1L Time: 15 sec)

Water Quality

Sample Time: 13:40

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N x

Transfer Blank Set Collected? Y ____ N x

Duplicate Set Collected? Y ____ N x

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:35	—	9.31		516	18.7	1.03	11.2	Measured parameters
13:40								Sampled WQ.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/22/13 8:40 Photos (#,Name): 1-5

Weather: sunny, cold, no wind.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sage brush Spring Source.

Spring Sampling Point Description Sampled from 2" pipe fitting discharging spring water to the uppermost (of 3) Stock tank.

Spring Flow Rate (gpm) 0.46 gpm (Volume: 1 L Time: 34.8 sec)

(15.85 gal/min / 1 L/s)

Water Quality

Sample Time: 9:25

Field Filtered? Y — N —

Samples Filtered: per work plan

Equip Blank Set Collected? Y X N — 9:35

Transfer Blank Set Collected? Y X N — 9:45

Duplicate Set Collected? Y X N — 9:55

~~Mercury transfer blank @ 9:50~~ Sample bottle froze, expanded, broke in ice chest.

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:10	1L/34.8s	7.99	270	384	9.7	9.0	87%	measured parameters.
9:25								Collected WQ
9:35								Equip Blank
9:45								Transfer Blank
9:55								Duplicate Collected.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/23/13 Photos (#,Name): 2 - 3

Weather: sunny, cold, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: 4833078 Easting: 464708

Spring Source Description Lower Sourdough Spring source.

Spring Sampling Point Description Sampled from discharge from ~1½" pipe that feed concrete stock tank. Border-line low flows.

Spring Flow Rate (gpm) 0.08 gpm (Volume: 125 mL Time: 25 sec)

Water Quality

Sample Time: 11:35

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

collected Mercury transfer/trip Blank.

Sampler Signature: E. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20		7.62	187	302	4.9	9.3	83	measured parameters
11:35								sampled WQ
11:40								Mercury Transfer trip blank

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/23/12 10:05~

Photos (#,Name): 1-5

Weather: sunny, cold, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Upper Sourdough Spring source

Spring Sampling Point Description Stock tank at upper Sourdough Spring. 1½" discharge pipe to tank is cracked on bottom and tilted up a bit, cause water to run down pipe, rather than drip/trickle into tank. Tied #15 s: tubing on end of pipe to create samplable stream of water.

Spring Flow Rate (gpm) 0.10 gpm (Volume: 380 mL Time: 60 sec)

Water Quality

Sample Time: 10:25

Field Filtered? Y ____ N ____

Samples Filtered: per Work Plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: M. [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:15	380mL / 60 sec	7.06	263	380	9.0	8.4	81.8%	collected params
10:25								collected WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: ~~Prod 1~~ Twin Springs North

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/22/13 ~~13:00~~ 14:10

Photos (#,Name): 6-2

Weather:

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Twin Springs.

Spring Sampling Point Description Sampled from discharge from ~1¼" pipe into the northmost stock tank @ Twin Springs.

Spring Flow Rate (gpm) 1.51 gpm (Volume: 1 L Time: 10.5 s)

Water Quality

Sample Time: 14:20

Field Filtered? Y ___ N ___

Samples Filtered: per work plan

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:15	1L/10.5s	7.78	325	434	11.8	6.6	65%	meas. params.
14:20								collected WQ.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/22/13 Photos (#,Name): 7-6

Weather: sunny, cool

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs

Spring Sampling Point Description discharge from ~1 1/2" pipe into southmost stock tank at Twin Springs.

Spring Flow Rate (gpm) 6.34 gpm (Volume: 1L Time: 2.5s) (2.5, 2.5, 2.5)

Water Quality

Sample Time: 15:00

Field Filtered? Y ~~N~~

Samples Filtered: per Work Plan

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:55	14/2.5s	7.88	332	438	12.3	8.7	90%	meas. params.
15:05								collected WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/23/13 14:05

Photos (#,Name): ~~4~~ 4-3

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Whiskey Spring Source

Spring Sampling Point Description Sampled from ~1½" pipe that discharges water into the ~10' DIA tractor tire stock tank

Spring Flow Rate (gpm) 0.90 gpm (Volume: 1 L Time: 17.65)

Water Quality

Sample Time: 14:25

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:15	1L/17.6 s	7.71	411	519	14.1	9.5	98%	meas. params
14:25								collected WQ

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Bull Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 3:30 pm (15:30) Photos (#,Name): 8-3

Weather: overcast / cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4831334 Easting: 464249

Spring Source Description Bull Spring

Spring Sampling Point Description discharge from ~1/4" pipe into stock tank.

Spring Flow Rate (gpm) 0.692 gpm (Volume: 1L Time: 22.9 sec

$\left(\frac{1L}{22.9s}\right)\left(\frac{15.85\ gpm}{L/s}\right)$

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:30	1L/22.9s							no odor, clear

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Darky Rock Well

Page No.: 1 of 1

Personnel: Erik Rae

Date: 11/21/13 12:30

Photos (#,Name): S-3

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4839673 Easting: 465168

Spring Source Description Artesian well flowing into a 4' DIA container that drains to drainage.

Spring Sampling Point Description Open discharge to tank from cracked in 6" DIA pipe

Spring Flow Rate (gpm) 11.32 gpm (Volume: 1L Time: 1.4s)
(1.4, 1.4, 1.3, 1.5)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: E.T.R.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:30	1L/1.4s							meas. flow rate.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Flowing Well Page No.: 1 of 1

Personnel: Erik Boe

Date: ~~4~~ 11/21/13 Photos (#,Name): 6-5

Weather: sunny, windy, cold.

GPS Coord. (UTM 11N, NAD83)

Northing: 4840435 Easting: 463722

Spring Source Description Artesian well discharging on concrete pad. Fiberglass tank was moved since last time.

Spring Sampling Point Description 1½" elbow discharging to concrete pad, see pictures.

Spring Flow Rate (gpm) ~~0.20 gpm~~ 3.11 gpm (Volume: 550 mL Time: 2.8 sec)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E T

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Central Grassy Mountain Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/12 14:30 Photos (#,Name): 7-3

Weather: overcast / cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4832963 Easting: 472326

Spring Source Description unknown location; Grassy Mtn Spring (assumed)

Spring Sampling Point Description Stagnant water ~ 10 paces upgrad from previous location (~10' length x 2' width). Muddy and trampled by cattle.

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Grassy Mountain Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/19/13 13:15 Photos (#,Name): 5-4

Weather: overcast / cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4837897 Easting: 472613

Spring Source Description Unknown location, presumed Grassy Mountain Spring.

Spring Sampling Point Description NA, stagnant water ~4' wide and ~15 paces in length, trampled by cattle.

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: West Grassy Mountain Spring Page No.: 1 of 1

Personnel: Erik Bue

Date: 11/18/13 14:00 Photos (#,Name): 6-2

Weather: overcast / cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4933171 Easting: 472083

Spring Source Description unknown. location. / Grassy Mtn spring.

Spring Sampling Point Description No water present, grassy wetland-type plants dried out.

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/21/13 11:00 Photos (#,Name): 2-3

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4838262 Easting: 466659

Spring Source Description unknown spring feeds ~10' DIA tractor tire stock tank. Feed below surface so no way to meas flow rate. Tank is full.

Spring Sampling Point Description NA

Spring Flow Rate (gpm) _____ (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Canyon Spring (creek) Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/21/13 14:15 Photos (#,Name): 8-4

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Negro Rock Canyon Spring source, emanating from ground at previously indentified ~~sour~~ GPS location. Feeds creek.

Spring Sampling Point Description NA (surface water sampled in creek down gradient), see Negro Rock creek surface water sample form.

Spring Flow Rate (gpm) ~ 5 → 10 gpm (Volume: _____ Time: _____ visual est.)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxbow Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 11:00 Photos (#,Name): 3-7

Weather: overcast and cold.

GPS Coord. (UTM 11N, NAD83) Tank location

Northing: 4830328 Easting: 472208

Spring Source Description Oxbow Spring, tank already identified. flow in spring tank similar to flow in stock tank. only couple inches of water in spring tank.

Spring Sampling Point Description Discharge from $1\frac{1}{4}$" pipe feeds ~10' DIA tractor tire tank. measured flows at this point.

Spring Flow Rate (gpm) 0.302 gpm (Volume: 1L Time: 52.5 sec

$\left(\frac{1L}{52.5s}\right)\left(15.85\ \frac{gpm}{L/s}\right)$

Water Quality

Sample Time: ~~11:00~~

Field Filtered? Y ~~N~~

Samples Filtered: ~~11:00~~

Equip Blank Set Collected? Y ~~N~~

Transfer Blank Set Collected? Y ~~N~~

Duplicate Set Collected? Y ~~N~~

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:00	1L/52.5sec							clear water, no odor

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxyoke Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 Photos (#,Name): 2-6

Weather: overcast, cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4829453 Easting: 472170

Spring Source Description unknown loc, Oxyoke Spring.

Spring Sampling Point Description NA, no flow in tank. ~1/2" of frozen water at base of tank, likely from precip recent.

Spring Flow Rate (gpm) — (Volume: — Time: —)

Water Quality

Sample Time: —

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y — N —

Transfer Blank Set Collected? Y — N —

Duplicate Set Collected? Y — N —

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:00	0							No flow to tank

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Red Tank #3 Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 17:00 Photos (#,Name): 10-4

Weather: overcast, cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4838488 Easting: 471528

Spring Source Description unknown.

Spring Sampling Point Description No way to measure flow rate. See pictures. ~~wat~~ discharge to tank is by one of two w/ 1½" inputs ~~from~~ that are below the water level. Tank is full, w/ ½" below top of down grad lip.

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:00								

~~Not on list~~

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Tank E of Negro Rock
Page No.: 1 of 1
Personnel: Erik Boe
Date: 11/18/13 17:45
Photos (#,Name): 11-4
Weather: overcast, cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4837399 Easting: 468185

Spring Source Description unknown

Spring Sampling Point Description discharge into tank from ~1½" pipe set ~45° up from horizontal. Approx 100 yards south of the pond located E of Negro rock, just east of Twin Springs road.

Spring Flow Rate (gpm) 9.9 gpm (Volume: 1 L Time: 1.7 sec, 1.6 sec, 1.6 sec) } measured 3 times to ensure accuracy.

$\left(\frac{1\,L}{1.6\,s}\right)\left(15.85\,\frac{gpm}{L/s}\right)$

Water Quality

Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
	~~1.6 L/s~~							
17:45	1L/1.6s							Relatively high flow
								no odor, clear.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Un-named Spring North of Lowe Reservoir Page No.: 1 of 1

Personnel: Erik Bay

Date: 11/23/13 13:00 Photos (#,Name): 3-3

Weather: sunny, cold, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: 4841110 Easting: 471328

Spring Source Description unknown

Spring Sampling Point Description no sample, un-able to measure flow into the ~10' DIA stock tank. Input below surface of water

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Erik

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Unnamed Spring in Section 13 T22S R44E

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/18/13 12:05

Photos (#,Name): 4-11

Weather: overcast, cold.

GPS Coord. (UTM 11N, NAD83)

Northing: 4833021

Easting: 477444

Spring Source Description unknown. spring flow in channel down grad from tank is low flow (near stagnant). merges w/ channel w/ even lower flow ~100 paces down grad. Source of the 2nd channel is unknown.

Spring Sampling Point Description Sampled from 1½" pipe that discharges to the ~10' DIA tractor tire stock tank.

Spring Flow Rate (gpm) 0.834 gpm (Volume: 1 L Time: 19.0 sec)

$\left(\frac{1\,L}{19.0\,s}\right)\left(15.85\ \frac{gpm}{L/s}\right)$

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:05	1L/19.0s							no odor, clear

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: ~~Unknown~~ Unnamed Spring Section 23 T21S R43E

Page No.: 1 of 1

Personnel: Erik Boe

Date: 11/21/13

Photos (#,Name): 9-6

Weather: Sunny, cold

GPS Coord. (UTM 11N, NAD83)

Northing: 4842685

Easting: 465309

Spring Source Description Water (frozen) eminating from ground at source. Surface water (frozen) for ~30 ft down gradient from source in the ephemeral channel. Recent debree flows above spring source is apperent, likely from recent heavy rains.

Spring Sampling Point Description NA

Spring Flow Rate (gpm) 0 (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: unnamed Spring South of Poison Springs

Page No.: 1 of 1

Personnel: Erik Bae

Date: 11/21/13 10:10

Photos (#,Name): 1-3

Weather: clear skys, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4839296 Easting: 467934

Spring Source Description unknown, eminating from side of cut out (pending)

Spring Sampling Point Description NA

Spring Flow Rate (gpm) stagnant (Volume: — Time: —)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: West Whiskey Spring Page No.: 1 of 1

Personnel: Erik Burr

Date: 11/21/13 Photos (#,Name): 4-8

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4839219 Easting: 464027

Spring Source Description frozen water emanating from ground @ source, frozen water ~30 ft down gradient. All tanks are dry.

Spring Sampling Point Description N/A

Spring Flow Rate (gpm) _____ (Volume: _____ Time: _____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Wildcat Spring

Page No.: 1 of 1

Personnel: Erik Bae

Date: 11/21/13 11:30

Photos (#,Name): 3-5

Weather: Sunny, cold, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: 4839230

Easting: 465341

Spring Source Description No water flowing to broken stock tank, standing water around tank and parallel drainage (frozen).

Spring Sampling Point Description

Spring Flow Rate (gpm) 0 (Volume:_____ Time:_____)

Water Quality

Sample Time:

Field Filtered? Y____ N____

Samples Filtered:

Equip Blank Set Collected? Y____ N____

Transfer Blank Set Collected? Y____ N____

Duplicate Set Collected? Y____ N____

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Owyhee Reservoir Dry Creek arm Page No.: 1 of 1

Sampling Location Name: Dry Creek Arm

Personnel: Erik Boe

Date: 11/23/13 Photos (#,Name): 7-3

Weather: sunny, cold, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: 4823359 Easting: 469151

Notes Reservoir has receded significantly since last time site is near edge (western most) of Reservoir dry creek arm.

Flow Rate: _____ **Flow Rate Measurement Desc:** _____

Flow Units: _____

Water Quality

Sample Time: 15:50

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y _____ N X

Transfer Blank Set Collected? Y _____ N X

Duplicate Set Collected? Y _____ N X

Sampler Signature: _____

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:40	7.92	217	328	~~7.3~~	11.0	100%	measured params
15:50				7.3			collected WQ

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Twin Springs Creek above confluence at Dry Creek arm Page No.: 1 of 1

Sampling Location Name: NA

Personnel: Erik Boe

Date: 11/23/13 Photos (#,Name): 6-2

Weather: sunny, cold, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: ~ Easting: ~

Notes Dry, no water

Flow Rate: _____ **Flow Rate Measurement Desc:** _____

Flow Units: _____

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Negro Rock Canyon Creek Page No.: 1 of 1

Sampling Location Name: @ small waterfall

Personnel: Erik Bal

Date: 11/21/13 14:20 Photos (#,Name): 8-4

Weather: sunny, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Notes low flows in Negro Creek at sample location (small waterfall). Approx 5 to 10 gpm

Flow Rate: 5→10 gpm **Flow Rate Measurement Desc:**

Flow Units: gpm Visual ~~estimate~~ estimate

Water Quality

Sample Time: 14:55 Equip Blank Set Collected? Y ____ N X

Field Filtered? Y ~~____~~ N ~~____~~ Transfer Blank Set Collected? Y ____ N X

Samples Filtered: per work plan Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:40	7.23		592	9.9	5.71	50.1	meas. parameters
14:55							collected WQ

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Owyhee River Down Stream of Owyhee Dam Page No.: 1 of 1

Sampling Location Name: Owyhee River DS of Owyhee Dam

Personnel: Erik Boe

Date: 11/20/13 Photos (#,Name): 2-3

Weather: partly cloudy, bit of Sun, cool.

GPS Coord. (UTM 11N, NAD83)

Northing: 4835852 Easting: 480990

Notes Water flowing with slightly lower flow rate then was observed at Leslie Gulch earlier in the morning. Area ~~was~~ had no standing water, but appears to have recieved precip from the earlier system that blew through.

Flow Rate: NA **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 15:10

Field Filtered? Y ~~N~~

Samples Filtered: per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:00	8.84	187	292	6.1	11.8	105%	~~Collected~~ measured parameters
15:10					~~11.8~~	~~105%~~	collected WQ samples

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Leslie Gulch Page No.: 1 of 1

Sampling Location Name: Leslie Gulch sample site at Owyhee Lake (River)

Personnel: Erik Boe

Date: 11/20/13 Photos (#,Name): 1-3

Weather: overcast, cold, rained earlier in day.

GPS Coord. (UTM 11N, NAD83)

Northing: 4796517 Easting: 473434

Notes Owyhee Lake drained/receded at Leslie Gulch site, Owyhee river flows. Water is relatively turbid, rain/snow receded while driving over the pass to Leslie Gulch.

Flow Rate: Unknown, but flowing. **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 11:00

Field Filtered? ~~Y~~ ~~N~~

Samples Filtered: Per work plan

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E. T.

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:55	8.43	239	357	7.7	10.2	95%	meas. params.
11:00							collected WQ samples

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 11/20/13 10:40
Calibration Method: 2 - point
Buffers Used: 7 and 10
Slope Deviation:
Electrode Efficiency: 98.0
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 11/12/13 10:35
Calibration Method: 1 pt, Cal SC to 1413 @ 25°C
Cell Constant: 5.34 Default? X Yes ____ No
Temperature Coefficient: ____ Default? X Yes ____ No
Temperature Reference: ____ Default? X Yes ____ No
Conductivity Standard: ~~1413~~
Conductivity Standard @ 25C: 1413 @ 25°C
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 11/20/13 10:45
Calibration Method: Auto Cal
Initial DO Saturation Reading: 100 % (Should read 100.5%)
Calibration Needed? ____ Yes X No, But ~~auto~~ auto cal'd anyway.
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 11-21-13 9:10
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 99.8
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 11-21-13 9:20
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: GeoTech standard 1413 mS/cm
Conductivity Standard @ 25C: 1413 mS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 11-21-13 9:30
Calibration Method: auto
Initial DO Saturation Reading: 94 (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No 101 %
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ YSI 556 MPS
Date / Time of Calibration: 11/21/13 9:30
Calibration Method: 2 - point
Buffers Used: 7 and 10 pH
Slope Deviation:
Electrode Efficiency:
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI 556 MPS
Date / Time of Calibration: 11/21/13 9:35
Calibration Method: 1 pt
Cell Constant: — Default? X Yes ____ No
Temperature Coefficient: — Default? X Yes ____ No
Temperature Reference: — Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI 556 MPS
Date / Time of Calibration: 11/21/13 9:45
Calibration Method: 1 pt
Initial DO Saturation Reading: NA (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 11/22/13 8:50
Calibration Method: 2 - point
Buffers Used: 7 and 10
Slope Deviation: —
Electrode Efficiency: 97.2 %
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 11/22/13 8:55
Calibration Method: 1 pt.
Cell Constant: — Default? X Yes ____ No
Temperature Coefficient: — Default? X Yes ____ No
Temperature Reference: — Default? X Yes ____ No
Conductivity Standard: ____
Conductivity Standard @ 25C: 1413 µS @ 25°C
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 11/22/13 9:00
Calibration Method: Cal to air, Auto method
Initial DO Saturation Reading: 98.8 % (Should read 100.5%)
Calibration Needed? X Yes ~~No~~
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 11/23/13 9:30
Calibration Method: 2 - point
Buffers Used: 7 and 10
Slope Deviation: –
Electrode Efficiency: 95.0
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: SMT

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 11/23/13 9:40
Calibration Method: 1 pt
Cell Constant: – Default? X Yes ____ No
Temperature Coefficient: – Default? X Yes ____ No
Temperature Reference: – Default? X Yes ____ No
Conductivity Standard: –
Conductivity Standard @ 25C: 1413 @ 25°C used
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: SMT

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 11/23/13 9:45
Calibration Method: to air
Initial DO Saturation Reading: 92% (Should read 100.5%)
Calibration Needed? X Yes ____ No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: SMT

Field Equipment Calibration Record

Instrument:	pH Meter
Manufacturer / Model:	YSI Ecosense pH100
Date / Time of Calibration:	11-24-13 10:40
Calibration Method:	2 - point
Buffers Used:	7 / 10
Slope Deviation:	—
Electrode Efficiency:	96.0
Successful Calibration?	✓ Yes ____ No
If No, List Corrective Action:	
Signature:	

Instrument:	Conductivity Meter
Manufacturer / Model:	YSI Ecosense EC300
Date / Time of Calibration:	11-24-13 10:45
Calibration Method:	known standard
Cell Constant:	5.00 Default? ✓ Yes ____ No
Temperature Coefficient:	1.91 Default? ✓ Yes ____ No
Temperature Reference:	25 C Default? ✓ Yes ____ No
Conductivity Standard:	EcoTech Standard
Conductivity Standard @ 25C:	1413 uS/cm
Successful Calibration?	✓ Yes ____ No
If No, List Corrective Action:	
Signature:	

Instrument:	Dissolved Oxygen Meter
Manufacturer / Model:	OxyGuard Handy Polaris 2
Date / Time of Calibration:	11-24-13 10:30
Calibration Method:	auto
Initial DO Saturation Reading:	105.2 (Should read 100.5%)
Calibration Needed?	✓ Yes ____ No
Calibration Precision:	✓ Field ____ Normal ____ High
Successful Calibration?	✓ Yes ____ No 100% reading
If No, List Corrective Action:	
Signature:	

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 11-25-13 9:40
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 95.5 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 11-25-13 9:45
Calibration Method: known std
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: Geotech standard
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 11-25-13 9:35
Calibration Method: auto
Initial DO Saturation Reading: 107 % (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 100%
If No, List Corrective Action:
Signature:

Q1 2014

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 3-24-14

SPF Sounder #: SPE WL 300-01

Sounder Correction:

Weather: Clear & warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.3

WL Meas Point Desc: hole near top of casing = 3.1' AGS

Const Depth [ft, BMP]: 203

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): 515

Flow Rate (gpm): 9 (33s)

Required Purge Time (min): 57

Page No.: 1 of 1

Photos (#,Name): —

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 471497

Pump Description

Permanent: ✓ Temporary: ____

Type: Unk HP: Unk

Setting Depth (ft): Unk

Drop Pipe Diam (in): Unk

Notes:

Water Quality

Sample Time: 12:35

Field Filtered? Y ✓ N ____

Samples Filtered: Metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ✓ N ____ @12:40

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:44	90.23							SWL
11:22 ~~10:22~~	90.44							SWL after pumping 59772
11:30	~~14.05~~	~~9~~	~~7.78~~	~~309.9~~	~~374.2~~	~~16.0~~	~~0.5/57~~	pump on
11:50	145.22	9	7.78	309.9	374.2	16.0	0.5/57	cloudy
12:10 ~~12:10~~	170-1.01	9	7.78	305.6	368.2	16.1	0.8/104	slightly cloudy
12:30	175.85	9	7.85	306.5	367.3	16.3	1.5/182	slightly cloudy
12:35								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761
Personnel: J Thompson
Date: 3-18-14
SPF Sounder #: SIF WL300-01
Sounder Correction: _____
Weather: clear & warm
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4835286
Easting: 471532

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of coupler = 0.19' below top of steel casing
Const Depth [ft, BMP]: 118
Locked? Y ✓ N _____ 3400
Well Condition: good

Pump Description
Permanent: ✓ Temporary: _____
Type: Grundfos HP: 0.5
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: _____

Water Quality
Sample Time: 16:30
Field Filtered? Y ✓ N _____
Samples Filtered: metals + anions lab
Equip Blank Collected? Y _____ N ✓
Transfer Blank Collected? Y _____ N ✓
Duplicate Set Collected? Y _____ N ✓

Casing Purge
3x Casing Volume (gal): 62
Flow Rate (gpm): 10 (30s)
Required Purge Time (min): 6

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:05	90.22							SWL
16:20								pump on
16:22	90.42	10	7.83	315.3	384.7	15.6	6.7/76%	clear
16:24	90.40	10	7.83	315.3	384.4	15.6	6.6/75%	clear
16:26	90.42	10	7.79	315.2	384.2	15.6	6.5/75%	clear
16:30								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Page No.: 1 of 1
Personnel: J Thompson
Date: 3-24-14
Photos (#,Name): ✓
SPF Sounder #: SPF WL300-01
Sounder Correction: ____
Weather: clear & warm
Wat Lev Transducer Download? Y ____ N ✓

GPS Coord. (UTM 11N, NAD83)
Northing: 4835105
Easting: 419094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 2.92
WL Meas Point Desc: top of coupler = 0.21'6 low surf casing
Const Depth [ft, BMP]: 323
Locked? Y ✓ N ____
Well Condition: cover and marker

Pump Description
Permanent: ✓ Temporary: ____
Type: grundfos HP: 0.25
Setting Depth (ft): 322
Drop Pipe Diam (in): 1.25
Notes: ____

Casing Purge
3x Casing Volume (gal): 200
Flow Rate (gpm): 3 (1:40)
Required Purge Time (min): 67

Water Quality
Sample Time: 15:15
Field Filtered? Y ✓ N ____
Samples Filtered: metals + perchl
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:01	280.14							SWL
14:05								pump on - brown color
14:25	295.13	3	7.64	1477	1513	23.7	0.8 / 10%	cloudy
14:45	—	3	7.68	1572	1605	23.9	0.5 / 7%	cloudy
15:05	—	3	7.69	1612	1642	24.1	0.8 / 11%	cloudy
15:15								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Page No.: 1 of 1
Personnel: J Thompson
Date: 3-18-14
Photos (#,Name): N
SPF Sounder #: SPF WL 300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: 4836380
Weather: clear & warm
Easting: 469927
Wat Lev Transducer Download? Y _____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: _____
Surface Casing Diam (in): 8
Type: Grundfos HP: 0.5
Well Casing Diam (in): 4
Setting Depth (ft): 42
Surface Casing Height AGL (ft): 2.8
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of cover = 0.18' blw surf. casing
Notes: _____
Const Depth [ft, BMP]: 45
Water Quality
Locked? Y ✓ N _____ 3246
Sample Time: 12:40
Well Condition: good
Field Filtered? Y ✓ N _____
Casing Purge
Samples Filtered: Metals + per lab
3x Casing Volume (gal): 41
Equip Blank Collected? Y _____ N ✓
Flow Rate (gpm): 3 (1.4)
Transfer Blank Collected? Y _____ N ✓
Required Purge Time (min): 14
Duplicate Set Collected? Y _____ N ✓
Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:13	31.36							SWL
12:20								pump on - brownish color
12:25	36.42	3	6.49	657	830	14.1	0.9 / 9%	brown color independent flow for good DO measurement
12:30	36.42	3	6.48	668	842	14.2	0.7 / 8%	slightly brown
12:35	36.38	3	6.52	684	843	~~15.1~~ 14.1	0.7 / 8%	clear
12:40								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-24-14

Photos (#,Name): —

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835229

Weather: clear & warm

Easting: 471504

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 8

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.9'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: Top of coupler = 0.22' below steel casing

Notes: New pump

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____

Sample Time: 11:05

Well Condition: cover and cracked

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals + nutrients

3x Casing Volume (gal): 224

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 26 (11s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 9

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:40	96.18							SWL
10:51								pump on
10:54	101.87	26	7.67	302.2	365.4	16.0	5.0 / 61%	clear
10:57	101.95	26	7.78	302.6	364.6	16.1	4.0 / 47%	clear
11:00	101.96	26	7.81	301.8	363.6	16.1	3.6 / 42%	clear
11:05								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-24-14

Photos (#,Name): —

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835898

Weather: clear + warm

Easting: 470402

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Pump Description

Surface Casing Diam (in): —

Permanent: ✓ Temporary: _____

Well Casing Diam (in): 6

Type: Grundfos HP: 0.5

Surface Casing Height AGL (ft): 0.85'

Setting Depth (ft): 168

WL Meas Point Desc: top of coupler = 0.19' above 6" casing

Drop Pipe Diam (in): 1.25

Notes: _____

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N _____

Sample Time: 13:45

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals - new bottle

3x Casing Volume (gal): 82 6x = 164

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 5 (60s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 32

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:07	156.49							SWL
13:11								pump on - rust-colored
13:21	162.54	5	7.70	994	1207	15.9	2.5/29%	clear
13:31	163.10	5	7.49	1372	1664	15.9	1.9/21%	clear
13:41	163.36	5	7.29	1674	2023	16.0	0.1/2%	clear
13:45								collect samples 6 casing volumes

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop
Page No.: 1 of 1
Personnel: J Thompson
Date: 3-24-14
Photos (#,Name): —
SPF Sounder #: SPFWL300-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction:
Northing: 4837564
Weather: clear + warm
Easting: 466562
Wat Lev Transducer Download? Y ____ N ✓

Well Description
Pump Description
Surface Casing Diam (in): NA
Permanent: ✓ Temporary: ____
Well Casing Diam (in): 12
Type: unk HP: 1.0 from control box
Surface Casing Height AGL (ft): 6" = 0.53' blw drum top
Setting Depth (ft): 167?
WL Meas Point Desc: top of 6" casing
Drop Pipe Diam (in): unk
Const Depth [ft, BMP]: 482
Notes: existing pump
Locked? Y ____ N ✓
Water Quality
Well Condition: good
Sample Time: 17:50
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: Metals at lab
3x Casing Volume (gal): 6633
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 15 (20s)
Transfer Blank Collected? Y ✓ N ____ Hg @ 17:40
Required Purge Time (min): 442
Duplicate Set Collected? Y ____ N ✓

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:35	110-6.12							SWL
15:45								pump on - cloudy
16:15	142.21	15	8.25	359.1	402.4	19.2	3.3 / 40%	clear
16:45	155.34	15	8.32	355.4	399.0	19.3	3.0 / 36%	clear
17:15	160-1.03	15	8.41	348.6	387.5	19.7	3.2 / 39%	clear
17:45	155.52	15	8.44	345.8	385.9	19.9	3.6 / 44%	clear
17:50								collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-18-14

Photos (#,Name): N

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835644

Weather: clear & warm

Easting: 471460

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 12

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3.5'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of coupler = 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: 15:20

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: Metals + per lab

3x Casing Volume (gal): 204

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 20 (15s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 10

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:14	55.51							SWL
14:57	55.60							SWL after pumping PW-1
15:05		20						pump on
15:08	70.80	20	7.84	327.2	394.4	16.1	5.8 / 67%	clear
15:11	70.94	20	7.82	327.2	394.0	16.1	5.6 / 65%	clear
15:15	71.15	20	7.80	327.0	393.6	16.1	5.1 / 59%	clear
15:20								~~15:~~ (collect samples)

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-18-14

Photos (#,Name): N

SPF Sounder #: SPFWL300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4838140

Weather: clear & warm

Easting: 470557

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): 8

Type: Grundfos HP: 1.5

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of coupler = 0.20' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____ 0616

Sample Time: 11:40

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals & perc lab

3x Casing Volume (gal): 566

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 30 (10s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 19

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:50	82.25							SWL
11:10	82.99							SWL after pumping PW-4
11:15								pump on - clear
11:22	91.06	30	8.91	528	637	16.0	9.0 / 98%	~~clear~~ slightly cloudy
11:29	91.46	30	8.83	529	638	16.1	8.7 / 97%	slightly cloudy
11:36	91.63	30	8.88	532	641	16.1	1.4 / 16%	slightly cloudy
11:40								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14

Photos (#,Name): 6-2

SPF Sounder #: NA

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NA

Northing: —

Weather: Sunny, light wind

Easting: —

Wat Lev Transducer Download? Y ____ N ____

Pump Description

Well Description

Permanent: X Temporary: ____ NA, artesian flow, assuming steady-state conditions.

Surface Casing Diam (in): ____ no change

Type: ____ HP: ____

Well Casing Diam (in): ____

Setting Depth (ft): ____

Surface Casing Height AGL (ft): ____

Drop Pipe Diam (in): ____

WL Meas Point Desc: ____

Notes: ____

Const Depth [ft, BMP]: ____

Water Quality

Locked? Y ____ N ____

Sample Time: ____ per W.P.

Well Condition: ____

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): NA, flowing

Equip Blank Collected? Y ____ N X

Flow Rate (gpm): (1 L/11.70 sec)15.85 = 1.35 gpm

Transfer Blank Collected? Y ____ N X

Required Purge Time (min): NA

Duplicate Set Collected? Y ____ N X

Sampler Signature: E. Boe

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:10	~~11.75~~	1L/11.7s	7.95	511	607	16.8	1.0/12%	clear, no odor
13:20								collected samples from 2" nose bib discharging to ground.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: ~~3-18-14~~ 3-18-14

Photos (#,Name): N

SPF Sounder #: SPF WL 300-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: 4835627

Weather: clear & warm

Easting: 471431

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: _____

Surface Casing Diam (in): NA

Type: Grundfos HP: 1.5?

Well Casing Diam (in): 6

Setting Depth (ft): unk

Surface Casing Height AGL (ft): 3.4' AGS

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of well cap = 3.38' AGS

Notes: _____

Const Depth [ft, BMP]: 550'

Water Quality

Locked? Y ✓ N _____ 3690

Sample Time: 14:45

Well Condition: good

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: metals @ per lab

3x Casing Volume (gal): 2193

Equip Blank Collected? Y _____ N ✓

Flow Rate (gpm): 30 (10s)

Transfer Blank Collected? Y _____ N ✓

Required Purge Time (min): 73

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:09	56.87							SWL
13:25								pump on - slightly cloudy
13:45	116.69	30	8.17	298.3	337.6	18.9	3.8/47%	clear
14:05	130-136	30	8.09	298.1	337.2	18.9	2.3/29%	clear
14:25	132.50	30	8.05	298.5	338.1	18.9	2.4/30%	clear
14:40	136.20	30	8.04	298.9	338.6	18.8	2.5/31%	clear
14:45								collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 3-18-14
SPF Sounder #: SPF WL 300-01
Sounder Correction: ____
Weather: clear + cool
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4838778
Easting: 470535

Well Description
Surface Casing Diam (in): 6
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of coupler = 3.16' AGS
Const Depth [ft, BMP]: 375
Locked? Y ~~✓~~ 98 N ✓ cap needs repair
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 1.5
Setting Depth (ft): 147 b/w TOC
Drop Pipe Diam (in): 1.25
Notes: ____

Water Quality
Sample Time: 10:50
Field Filtered? Y ✓ N ____
Samples Filtered: metals & anions Pb
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 1311
Flow Rate (gpm): 30 (10s)
Required Purge Time (min): 44

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:43	80.47							SWL
10:00								pump on water blackish
10:15	95-1.29	30	8.95	627	766	15.5	5.8 / 64?	water blackish
10:30	95.40	30	8.65	657	797	15.9	1.8/20?	water cloudy
10:45	95.65	30	8.52	668	809	15.9	1.1/13?	cloudy
10:50								collect sample

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Bae

Date: 3/16/14 Photos (#,Name): 5-2

Weather: sunny, hazey, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Deposit stock tank source

Spring Sampling Point Description Sampled from the 1 1/2" pipe discharging to the large round tank (NE most)

Spring Flow Rate (gpm) 0.56 gpm (Volume: 1L Time: 28.30)

$\left(\frac{1L}{28.30s}\right) 15.85 = 0.56$

Water Quality

Sample Time: 12:35

Field Filtered? Y — N — Per W.P.

Samples Filtered: — Per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y X N ____

12:45 sample time

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:25	1L/28.3s		331	496	7.7	8.9	86%	slightly turbid, no odor
12:35								collected samples
12:45								collected duplicates

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank, second visit. Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/24/14 Photos (#,Name): —

Weather: Sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Deposit Stock tank source.

Spring Sampling Point Description Sampled from discharge to large diameter stock tank.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: 13:20

Field Filtered? Y — N — per W.P.

Samples Filtered: — per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:15		—	—	—	—	—	—	steady state flow
13:20								Sampled only for
								Total & Dis. Low
								Level Hg due to
								sample breakage
								during shipping
								to ACZ.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/14 Photos (#,Name): 2-2

Weather: cloudy, Cool

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Government Corral spring source.

Spring Sampling Point Description Sampled from discharge out of 1½" pipe that feeds upper most tank @ Government Corral.

Spring Flow Rate (gpm) 1.67 gpm (Volume: 1 L Time: 9.51)

$\left(\frac{1L}{9.51}\right)15.85 = 1.67$ gpm

Water Quality

Sample Time: 10:30

Field Filtered? Y ~~N~~ per W.P

Samples Filtered: — per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.M.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:20	1L/9.51s	7.57	288	406	9.7	9.2	93%	
10:30								Collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring
Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/12/14
Photos (#,Name): 12-2

Weather: Sunny, few clouds, windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Spring source.

Spring Sampling Point Description Measured Q from broken HDPE line, did not collect sample since Q < 350 mL/min.

Spring Flow Rate (gpm) 0.016 gpm (Volume: 60 mL Time: 61 secs)

$\left(\frac{0.06\,L}{61\,s}\right)15.85 = 0.016$ gpm

Water Quality

Sample Time: NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N NA

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:30	60mL/61s	/	/	/	/	/	/	no sample.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 3-2

Weather: Sunny and cloudy, cool

GPS Coord. (UTM 11N, NAD83)

Northing: ~ Easting: ~

Spring Source Description Lowe spring source ~~sticking out of rock bank.~~

Spring Sampling Point Description Measured flow from a 1 1/4" HDPE line coming out side of wall in excavated pit. No samples since Q = 100 mL/min which is less than the 250 mL/min minimum sample rate.

Spring Flow Rate (gpm) 0.026 gpm (Volume: 100 mL Time: 60 sec)

$\left(\frac{0.1\ L}{60\ s}\right) 15.85 = 0.026$ gpm

Water Quality

Sample Time: NA

Field Filtered? Y ~~N~~ NA

Samples Filtered: ~~NA~~

Equip Blank Set Collected? Y ~~N~~ NA

Transfer Blank Set Collected? Y ~~N~~ NA

Duplicate Set Collected? Y ~~N~~ NA

Sampler Signature: E.T. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:05	100 mL/min	~	~	~	~	~	~	clear, no odor
								no sample.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 4-3

Weather: sunny and overcast cool light wind.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description poison spring source

Spring Sampling Point Description Sampled from crack in 2'x2' concrete well. Water level was 3.25" below North edge of well.

Spring Flow Rate (gpm) ~1L/10 sec (Vis Est.) (Volume:____ Time:____)

Consistant w/ flows observed last fall. ~1 gpm

Water Quality

Sample Time: 11:45

Field Filtered? Y ~~N~~ Per W.P.

Samples Filtered: ~~—~~ Per WP

Equip Blank Set Collected? Y____ N X

Transfer Blank Set Collected? Y____ N X

Duplicate Set Collected? Y____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:30		9.37	432	478	19.8	8.3	94%	clear,
11:45								sampled spring.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 1 - 2

Weather: overcast, cool

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sagebrush Spring source

Spring Sampling Point Description Uppermost stock tank fed by sagebrush spring, sampled from discharge from ~1" pipe that feeds tank

Spring Flow Rate (gpm) 0.86 gpm (Volume: 1 L Time: 18.5 s)

$\left(\frac{1L}{18.5s}\right)15.85 = 0.86$

Water Quality

Sample Time: 9:30

Field Filtered? Y ~~N~~ per W.P.

Samples Filtered: per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.M.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:30	1L/18.5s	7.55	277	392	9.6	9.4	101	clear, no odor
9:30								Collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/17/14 Photos (#,Name): 11-2

Weather: Sunny, windy (very) some clouds.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sourdough Lower source.

Spring Sampling Point Description Sampled from discharge to stock tank (concrete)

Spring Flow Rate (gpm) 0.14 gpm (Volume: 125 mL Time: 14.65 sec) $\left(\frac{0.125}{14.65}\right)$ 15.85 = 0.14 gpm

Water Quality

Sample Time: 12:30

Field Filtered? Y — N —

Samples Filtered: —

Hg Transfer Blank @ 12:45

Equip Blank Set Collected? Y X N — 13:00

Transfer Blank Set Collected? Y X N — 13:20

Duplicate Set Collected? Y — N X

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:15	125mL/14.65	7.59	216	339	6.5	4.9	44%	clear no odor
12:30								Collected Samples
12:45								Hg transfer Blank
13:00								Equip Blank
13:20								Transfer Blank

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/17/14 Photos (#,Name): 10-2

Weather: Sunny and windy, very windy.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sourdough Upper Spring source

Spring Sampling Point Description Sampled from discharge to stock tank. See picture, had to wrap si tubing around pipe to create sampleable flow.

Spring Flow Rate (gpm) 0.10 gpm (Volume: ~~250mL~~ 125mL Time: 19.0s)

$\left(\frac{0.125\ L}{19.0\ s}\right) 15.85 = 0.10$ gpm

Water Quality

Sample Time: 11:10

Field Filtered? Y ____ N ~~—~~ per WP

Samples Filtered: ~~—~~ per WP

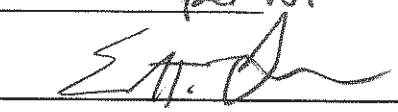
Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.M. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	~~250mL/19s~~	7.07	266	405	6.9	6.9	72%	clear no odor
	125mL/19s							
11:10								collected sample



Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 8-2

Weather: Sunny, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Twin Springs Source.

Spring Sampling Point Description Sampled from discharge into Twin Springs North stock tank.

Spring Flow Rate (gpm) 1.44 gpm (Volume: 1L Time: 11.0 sec)

$\left(\frac{1L}{11s}\right) 15.8s = 1.44$ gpm

Water Quality

Sample Time: 16:10

Field Filtered? Y ~~N~~ per W.P.

Samples Filtered: — per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:55	1L/11.0sec	7.37	319	422	~~12.6~~ 9	2.2	24%	clear, no odor.
16:10								collected samples.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 9-3

Weather: Sunny windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Twin Springs Source

Spring Sampling Point Description Sampled from discharge to Twin Springs southern most stock tank.

Spring Flow Rate (gpm) 5.81 gpm (Volume: 1L Time: 2.70s, 2.70s, 2.88s)

$\left(\frac{1L}{2.73s}\right)15.85 = 5.81$

Water Quality

Sample Time: 17:05

Field Filtered? Y — N — per W.P.

Samples Filtered: — per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:45	1L/2.73	7.65	337	432	12.9	8.0	89%	clear, no odor.
17:05								collected samples.
17:25								completed Hg Trip Blank.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/16/14 Photos (#,Name): 7-3

Weather: Sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Whiskey spring source.

Spring Sampling Point Description Sampled from discharge to ~10' DIA tractor tire stock tank

Spring Flow Rate (gpm) 0.86 gpm (Volume: 1L Time: 18.5 sec)

$\left(\frac{1L}{18.5s}\right) 15.85 = 0.86$ gpm

Water Quality

Sample Time: 15:25

Field Filtered? Y ___ N ___ per wp

Samples Filtered: ___ per wp

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:10	1L/18.5s	7.68	467	514	13.8	7.8	86 %	clear, no odor
15:25								collected samples.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: Erik Bae

Date: 3/24/19

SPF Sounder #: SPF-WL1000-01

Sounder Correction: _____

Weather: Sunny, very light wind

Wat Lev Transducer Download? Y ~~N~~ NA

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: Marked pt., Top of 2" pipe

Const Depth [ft, BMP]: _____

Locked? Y X N _____ master [redacted]

Well Condition: no change

Casing Purge

3x Casing Volume (gal): NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): —

GPS Coord. (UTM 11N, NAD83)

Northing: Known

Easting: _____

Pump Description

Permanent: _____ Temporary: NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:40	77.60	/	/	/	/	/	/	Static Water Level

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/24/14

Photos (#,Name): —

SPF Sounder #: SPF-WL1000-01

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: _____

Northing: Known

Weather: Sunny, light wind

Easting: _____

Wat Lev Transducer Download? Y ~~N~~ ~~NA~~

Pump Description

Well Description

Permanent: _____ Temporary: NA

Surface Casing Diam (in): ✓

Type: _____ HP: _____

Well Casing Diam (in): ✓

Setting Depth (ft): _____

Surface Casing Height AGL (ft): ✓

Drop Pipe Diam (in): _____

WL Meas Point Desc: Marked MP, Top of 2"

Notes: _____

Const Depth [ft, BMP]: ✓

Water Quality

Locked? Y X N _____ Master [redacted]

Sample Time: NA

Well Condition: no change

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): NA

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:45	57.51	✓	✓	✓	✓	✓	✓	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: Erik Boe

Date: 3/24/14

SPF Sounder #: SPF-WL1000-01

Sounder Correction: _____

Weather: Sunny, very light wind

Wat Lev Transducer Download? Y ___ N ___ NA

Well Description

Surface Casing Diam (in): _____ Known

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: Marked top of 4"

Const Depth [ft, BMP]: _____

Locked? Y X N _____ Master

Well Condition: no change

Casing Purge

3x Casing Volume (gal): _____ NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Known

Easting: _____

Pump Description

Permanent: _____ Temporary: _____ NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____ NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:10	619.66	/	/	/	/	/	/	Static Water Level

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: Erik Boe

Date: 3/24/14

SPF Sounder #: SPF-WL-1000-01

Sounder Correction: _____

Weather: Sunny, light wind

Wat Lev Transducer Download? Y ~~N~~ NO

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Known

Easting: _____

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: Marked mp

Const Depth [ft, BMP]: _____

Locked? Y X N _____ Master [redacted]

Well Condition: _____

Pump Description

Permanent: _____ Temporary: NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____ NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____ NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:05	273.23	~	~	~	~	~	~	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: Erik Boe

Date: 3/24/14

SPF Sounder #: SPF-WL1000-01

Sounder Correction: _____

Weather: sunny, light wind

Wat Lev Transducer Download? Y X N _____ and reset

Page No.: 1 of 1

Photos (#,Name): —

GPS Coord. (UTM 11N, NAD83)

Northing: _____ known

Easting: _____

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: Marked mp, w ½" hole on cap

Const Depth [ft, BMP]: _____

Locked? Y X N _____ Master [redacted]

Well Condition: _____

Pump Description

Permanent: _____ Temporary: NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:45	164.49							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: Erik Boe

Date: 3/24/14

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Weather: Sunny, light wind

Wat Lev Transducer Download? Y ___ N ___ NA

Page No.: 1 of 1

Photos (#,Name): —

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Known

Easting: _____

Well Description

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: Marked MP, top of 6" steel casing

Const Depth [ft, BMP]: _____

Locked? Y X N _____ Master [redacted]

Well Condition: no change

Pump Description

Permanent: _____ Temporary: NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____ NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____ NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:50	227.16	/	/	/	/	/	/	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: Erik Bae

Date: 3/24/14

SPF Sounder #: SPF WL1000-01

Sounder Correction: _____

Weather: Sunny, light wind

Wat Lev Transducer Download? Y ___ N ___ NA

Page No.: 1 of 1

Photos (#,Name): —

GPS Coord. (UTM 11N, NAD83)

Northing: _____ known

Easting: _____

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): —

Surface Casing Height AGL (ft): —

WL Meas Point Desc: marked MP, top of 2"

Const Depth [ft, BMP]: —

Locked? Y X N _____ master

Well Condition: no change

Pump Description

Permanent: _____ Temporary: NA

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____ NA

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____ NA

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:25	140.82	—	—	—	—	—	—	SWL

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3/16/14 8:30
Calibration Method: 2 - point
Buffers Used: 7 and 10 pH
Slope Deviation:
Electrode Efficiency: 94.8
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: S. T

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3/16/14 8:40
Calibration Method: 1 pt
Cell Constant: 5.05 ~~5.46~~ ~~1.91~~ Default? X Yes ____ No
Temperature Coefficient: ~~25 °C~~ 1.91 Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S. T.

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 8:50 3/16/14
Calibration Method: 1 pt to air
Initial DO Saturation Reading: 100.5 (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: S. T

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3/17/14 10:20
Calibration Method: 2 - point
Buffers Used: 7 & 10 pH
Slope Deviation:
Electrode Efficiency: 94.7
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3/17/14 10:25
Calibration Method: 1 pt
Cell Constant: 5.00 Default? X Yes ____ No
Temperature Coefficient: 1.95 Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: ~~1413 µS~~ (B)
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3/17/14 10:30
Calibration Method: 1 pt to air
Initial DO Saturation Reading: 100.5 (Should read 100.5%)
Calibration Needed? ____ Yes x No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3-18-14 9:15
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 93.4%
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3-18-14 9:25
Calibration Method: known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91% Default? ✓ Yes ____ No
Temperature Reference: 25.0 C Default? ✓ Yes ____ No
Conductivity Standard: Scotech
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3-18-14
Calibration Method: air to
Initial DO Saturation Reading: 94% (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 101%
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 3-24-14 10:30
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 96.3 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 3-24-14 10:35
Calibration Method: Known Standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: Geotech exp March 14
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 3-24-14 10:32
Calibration Method: auto
Initial DO Saturation Reading: 101 % (Should read 100.5%)
Calibration Needed? ____ Yes ✓ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ____ Yes ____ No NA
If No, List Corrective Action: ____
Signature: [signature]

Q2 2014

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85'

WL Meas Point Desc: top of coupler = 0.19' above 6"

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____ 3690

Well Condition: good

Casing Purge

3x Casing Volume (gal): 82 6X = 164

Flow Rate (gpm): 5 (60s)

Required Purge Time (min): 32 min for 6 casing vols

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835890

Easting: 470406

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 0.5

Setting Depth (ft): 168

Drop Pipe Diam (in): 1.25

Notes: ~~[illegible]~~ perm

Water Quality

Sample Time: 12:01

Field Filtered? Y ✓ N ____

Samples Filtered: Metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:22	156.17							SWL
11:28								pump on
11:39	162.10	5	7.17	1192	1455	15.8	0.4 / 5%	clear
11:50	162.39	5	7.08	1596	1933	15.9	0.1 / 2%	~~clear~~ brownish color
12:01	162.82	5	6.98	1869	2262	16.0	0.1 / 1%	collect samples - clear

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top of 6" casing

Const Depth [ft, BMP]: 482

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): 6633

Flow Rate (gpm): 15 (20s)

Required Purge Time (min): 442

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 466562

Pump Description

Permanent: ✓ Temporary: ____

Type: unk HP: 1.0

Setting Depth (ft): 167?

Drop Pipe Diam (in): unk

Notes: existing

Water Quality

Sample Time: 17:30

Field Filtered? Y ✓ N ____

Samples Filtered: metals & pooled

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:27	107.79							SWL
15:30								pump on - clear
16:00	142.22	15	8.51	331.7	364.0	20.3	3.4 / 43%	clear
16:30	155.39	15	8.48	332.7	366.5	20.2	0.4 / 4%	clear
17:00	157.43	15	8.37	335.7	369.5	20.2	1.0 / 12%	clear
17:30	158.13	15	8.42	338.7	371.5	20.3	2.9 / 37%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1
Personnel: J Thompson
Date: 6-25-14
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4835644
Easting: 471460

Well Description
Surface Casing Diam (in): 12
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.5
WL Meas Point Desc: top of sounder coupler = 3.68' AGS = 0.17' above wellcap
Const Depth [ft, BMP]: 156
Locked? Y ✓ N ____ new lock ~~out~~ 1163
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: new pump

Casing Purge
3x Casing Volume (gal): 204
Flow Rate (gpm): 20 (15.5)
Required Purge Time (min): 10

Water Quality
Sample Time: 14:20
Field Filtered? Y ✓ N ____
Samples Filtered: metals in acid lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ✓ N ____ Hg transfer 14:30
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:26	55.23							SWL
14:06	55.42							SWL
14:10								pump on - clear
14:13	—	10	7.34	327.8	394.8	16.1	4.9 / 59%	clear
14:16	67.45	10	7.41	328.0	394.6	16.2	4.6 / 54%	clear
14:20	67.59	10	7.42	328.1	394.5	16.2	4.5 / 53%	collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: ~~6-25-14~~ 6-27-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4838740

Weather: cloudy & cool, warm

Easting: 470557

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ✓ Temporary: ____

Surface Casing Diam (in): 8

Type: grundfos HP: 1.5

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of sounder coupler = 0.20' below surf casing

Notes: new pump

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N ~~DATE~~ new lock 1163

Sample Time: 9:11

Well Condition: good

Field Filtered? Y ✓ N ____

Casing Purge

Samples Filtered: metals dyes lab

3x Casing Volume (gal): 566

Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 30 (10 s)

Transfer Blank Collected? Y ____ N ✓

Required Purge Time (min): 19

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:44	82.07							~~Start~~ lock changed
8:50								pump on -
57	90.65	30	8.57	535	645	16.1	2.5 / 28%	slightly cloudy
9:04	91.07	30	8.65	536	646	16.1	1.4 / 16%	slightly cloudy
9:11	91.27	30	8.67	540	649	16.2	0.7 / 9%	clear some bubbles

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Personnel: Erik Boe

Date: 6/24/14

SPF Sounder #: NA

Sounder Correction: NA

Weather: Sunny, warm, windy

Wat Lev Transducer Download? Y ____ N X

Well Description

Surface Casing Diam (in): Known

Well Casing Diam (in): Known

Surface Casing Height AGL (ft): Known

WL Meas Point Desc: flowing

Const Depth [ft, BMP]: known

Locked? Y ____ N ____

Well Condition: no change

Casing Purge

3x Casing Volume (gal): artesian flow, assume steady state conditions

Flow Rate (gpm): 1 L / 12.0 sec = 1.32 gpm

Required Purge Time (min): NA

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): 6-2

GPS Coord. (UTM 11N, NAD83)

Northing: same

Easting: same

Pump Description

Permanent: X Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: flowing

Water Quality

Sample Time: 15:40

Field Filtered? Y ____ N ~~X~~ Per WP

Samples Filtered: ____ Per WP

Equip Blank Collected? Y ____ N X

Transfer Blank Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:25	flowing	1L/12s	7.81	521	599	18.1	1.1 / 14%	clear, no odor
15:40								collected sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 6-25-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.41' AGS

WL Meas Point Desc: top of well cap = 3.34' AGS

Const Depth [ft, BMP]: 550'

Locked? Y ✓ N ____ new lock 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): 2193

Flow Rate (gpm): 30 (10s)

Required Purge Time (min): 73

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 471431

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 1.5?

Setting Depth (ft): unk

Drop Pipe Diam (in): 1.25

Notes: ____

Water Quality

Sample Time: 13:50

Field Filtered? Y ✓ N ____

Samples Filtered: Metals + per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:23	56.60							start
12:35								pumping - brown
12:55	109.56	30	7.68	299.2	338.5	18.9	1.9 / 242	slightly brown
13:15	120.76	30	7.75	300.4	339.0	19.0	2.4 / 302.	clear
13:35	125.41	30	7.74	301.2	340.1	19.0	2.5 / 329.	clear
13:50	~~123.32~~	30	7.72	301.6	340.6	19.0	2.6 / 332	collect samples
	127.32							

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-25-14
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: none
Northing: 4838778
Weather: clear warm
Easting: 470535
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: ____
Surface Casing Diam (in): 6" lower 10"
Type: Grundfos HP: 1.5
Well Casing Diam (in): 6"
Setting Depth (ft): 147
Surface Casing Height AGL (ft): 3'
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of coupler = 0.16' above LSP
Notes: recm pump
Const Depth [ft, BMP]: 375
Water Quality
Locked? Y ____ N ✓ new cover broken
Sample Time: 10:40
Well Condition: good
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: Metals + perchlorate
3x Casing Volume (gal): 1311
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 30 (10s)
Transfer Blank Collected? Y ____ N ✓
Required Purge Time (min): 44
Duplicate Set Collected? Y ✓ N ____ 10:50
Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:30	82.43							SWL
9:55		30						pump in / water black
10:10		30	8.68	630	767	15.7	1.4 / 18%	cloudy
10:25	96.37	30	8.51	651	787	15.9	0.2 / 2%	slightly cloudy
10:40	96.80	30	8.51	661	798	16.0	0.1 / 1%	collected samples - cloudy

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-25-14
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: none
Northing: 4835250
Weather: cloudy, rain
Easting: 471497
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: ____
Surface Casing Diam (in): 10
Type: unk HP: unk
Well Casing Diam (in): 6
Setting Depth (ft): unk
Surface Casing Height AGL (ft): 3.3
Drop Pipe Diam (in): unk
WL Meas Point Desc: hole in casing = 0.22' blw top plate
Notes: ____
Const Depth [ft, BMP]: 203
Water Quality
Locked? Y ✓ N ____
Sample Time: 16:55
Well Condition: good
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: metals + perc lab
3x Casing Volume (gal): 515
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 9 (33 sl)
Transfer Blank Collected? Y ____ N ✓
Required Purge Time (min): 57
Duplicate Set Collected? Y ____ N ✓
Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:08	89.09							SWL
15:48	89.30							SWL
15:55								pump on - cloudy
16:15	—	9	7.26	301.1	363.9	16.0	0.7 / 8%	clear
16:35	—	9	7.35	302.8	363.0	16.3	1.4 / 17%	clear
16:55	187.45	9	7.37	297.7	355.5	16.5	2.0 / 23%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thomason

Date: 6-27-14

SPF Sounder #: SPF 300 ENV

Sounder Correction: _____

Weather: cloudy rain light

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3'

WL Meas Point Desc: top of coupler = 0.19' blw casing

Const Depth [ft, BMP]: 118

Locked? Y ✓ N _____ NCW 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): 62

Flow Rate (gpm): 10 (30s)

Required Purge Time (min): 6

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835286

Easting: 421532

Pump Description

Permanent: ✓ Temporary: _____

Type: grundfos HP: 0.5

Setting Depth (ft): 105

Drop Pipe Diam (in): 1.25

Notes: perm

Water Quality

Sample Time: 10:46

Field Filtered? Y ✓ N _____

Samples Filtered: metals & perk lab

Equip Blank Collected? Y _____ N ✓

Transfer Blank Collected? Y _____ N ✓

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:38	89.22							SWL
10:40								pump on
10:42	89.42	10	7.84	324.2	394.9	15.6	6.3 / 74%	clear
10:44	89.42	10	7.57	322.5	393.9	15.6	6.3 / 73%	clear
10:46	—	10	7.56	322.7	392.9	15.6	6.3 / 73%	collected sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top of coupler 0.25 blw casing

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____ 3246

Well Condition: cone pad cracked

Casing Purge

3x Casing Volume (gal): 200

Flow Rate (gpm): 3 (1:40)

Required Purge Time (min): 67

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835105

Easting: 469094

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 0.75

Setting Depth (ft): 322

Drop Pipe Diam (in): 1.25

Notes: perm

Water Quality

Sample Time: 14:35

Field Filtered? Y ✓ N ____

Samples Filtered: metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ✓ N ____

Duplicate Set Collected? Y ____ N ✓

trip blank Hg ~~transfer~~ 14:30

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:22	279.88							SWL
13:25								pump on - clear
13:45	—	3	7.37	1490	1526	23.8	0.4 / 5%	air bubbles
14:05	—	3	7.54	1586	1616	24.0	0.5 / 7%	air bubbles
14:25	—	3	7.60	1642	1663	24.5	0.8 / 12%	air bubbles
14:35	—	3						collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-25-14
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: None
Northing: 4836380
Weather: cloudy, warm
Easting: 469927
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ✓ Temporary: ____
Surface Casing Diam (in): 8
Type: Grundfos HP: 0.5
Well Casing Diam (in): 4
Setting Depth (ft): 92
Surface Casing Height AGL (ft): 2.8
Drop Pipe Diam (in): 1.25
WL Meas Point Desc: top of sounder cover = 0.18' blw surf casing
Notes: grim pump
Const Depth [ft, BMP]: 45
Water Quality
Locked? Y ✓ N ____ 3246
Sample Time: 11:37
Well Condition: good
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: Metals on for lab
3x Casing Volume (gal): 41
Equip Blank Collected? Y ____ N ✓
Flow Rate (gpm): 3 (1:40)
Transfer Blank Collected? Y ____ N ✓
Required Purge Time (min): 14
Duplicate Set Collected? Y ____ N ✓
Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:13	31.58							SWL
11:22								pump on milky brown
11:27	36.31	3	6.45	687	836	15.7	1.7 / 22%	slightly cloudy
11:32	36.37	3	6.30	697	849	15.7	1.7 / 20%	clear
11:37	36.41	3	6.35	717	861	16.5	1.7 / 19%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772
Page No.: 1 of 1
Personnel: J Thompson
Date: 6-25-14
Photos (#,Name): 4N
SPF Sounder #: SPF300 ENG
Sounder Correction: none
Weather: cloudy, rain
Wat Lev Transducer Download? Y ____ N ✓

GPS Coord. (UTM 11N, NAD83)
Northing: 4835229
Easting: 471504

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.9'
WL Meas Point Desc: top of sounder coupler = 0.22' below top of steel casing
Const Depth [ft, BMP]: 207
Locked? Y ✓ N ____
Well Condition: conc pad cracked

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 126
Drop Pipe Diam (in): 1.25
Notes: prem pump

Water Quality
Sample Time: 15:30
Field Filtered? Y ✓ N ____
Samples Filtered: Metals & per lab
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 22.4
Flow Rate (gpm): 26 (lls)
Required Purge Time (min): 4

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:55	95.06							SWL
15:18								pump on
15:19	102.45	26	7.22	294.2	355.4	16.0	2.9/36%	clear
15:22	—	26	7.26	295.3	356.2	16.1	2.9/34%	clear
15:25		26	7.31	295.4	356.2	16.1	3.0/36%	clear
15:30								collect samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/24/14 Photos (#,Name): 7-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description unknown source (no change from previous)

Spring Sampling Point Description Sampled from discharge from Large dia Stock tank w/ drizzle flow. Cattle standing in tank when I arrived

Spring Flow Rate (gpm) 0.14 gpm (Volume: 1L Time: 111 sec)

Water Quality

Sample Time: 16:15

Field Filtered? Y ~~N~~ Per WP

Samples Filtered: ~~Per WP~~

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:00	1L/111 sec	7.18	462	478	23.1	3.6 mg/L	49%	clear, no odor
16:15								collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/24/14

Photos (#,Name): 4-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same

Easting: same

Spring Source Description Government corral spring source

Spring Sampling Point Description Sampled from discharge feeding uppermost stock tank

Spring Flow Rate (gpm) 2.14 gpm (Volume: 1L Time: 7.4 sec)

Water Quality

Sample Time: 13:10

Field Filtered? Y ~~N~~ per WP

Samples Filtered: per WP

Sampler Signature:

Equip Blank Set Collected? Y X N

Transfer Blank Set Collected? Y X N

Duplicate Set Collected? Y N X

"Equipment Blank" @ 13:40

"Transfer Blank" @ 13:55

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:45	14/7.45	7.64	337	406	16.0	7.4	87%	clear, no odor
13:10								collected samples
13:40								Equipment Blank
13:55								Transfer Blank.

* Transfer Blank → no green dot bottles.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/24/14

Photos (#,Name): 8-2

Weather: overcast, sprinkling

GPS Coord. (UTM 11N, NAD83)

Northing: known

Easting: known

Spring Source Description Grassy Spring Source

Spring Sampling Point Description measured flow from end of broken HDPE line. Q << 250mL/min so no sample.

Spring Flow Rate (gpm) 0.013 gpm

(Volume: 50 mL Time: 60 sec) = 50mL/min

$\left(\frac{0.05L}{60s}\right)15.85 = 0.013$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:00	50mL/min	/	/	/	/	/	/	no sample, drip flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 6/24/14
Photos (#,Name): S-2
Weather: Sunny, warm, windy
GPS Coord. (UTM 11N, NAD83)
Northing: Same
Easting: Same

Spring Source Description Lowe Spring source

Spring Sampling Point Description broken HDPE line, Q << 250 mL/min so no sample collected. Drip flow

Spring Flow Rate (gpm) 0.003 gpm (Volume: 12 mL Time: 60 sec) = 12 mL/min

$\left(\frac{0.012\,L}{60s}\right)15.85 = 0.003$

Water Quality

Sample Time: NA
Field Filtered? Y ____ N ____
Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:25	12mL/60s	/	/	/	/	/	/	no sample

4 mL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/24/14

Photos (#,Name): 1-2

Weather: sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same

Easting: same

Spring Source Description Poison spring source

Spring Sampling Point Description Sampled from water flowing from crack on west side of concrete well/structure.

Spring Flow Rate (gpm) ~1 gpm (Volume:_____ Time:_____)

Visual estimate, can't capture all water in measurment container.

Water Quality

Sample Time: 9:40

Field Filtered? Y ___ N ___ per WP

Samples Filtered: ___ per WP

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:35	~1	9.23	431	473	20.3	4.7	60%	
9:40								Collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 6/24/14
Photos (#,Name): 3-2
Weather: Sunny, windy
GPS Coord. (UTM 11N, NAD83)
Northing: same
Easting: same

Spring Source Description Sagebrush spring source.

Spring Sampling Point Description Sampled from discharge filling upper mult stock tank.

Spring Flow Rate (gpm) 1.17 gpm (Volume: 1 L Time: 13.5 sec)

Water Quality

Sample Time: 12:10
Field Filtered? Y ___ N ___ per WP
Samples Filtered: ___ per WP

Equip Blank Set Collected? Y ___ N X
Transfer Blank Set Collected? Y ___ N X
Duplicate Set Collected? Y ___ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:50	14/13.5s	7.51	292	368	14.2	9.6	99	clear, no odor
12:10								collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/23/14

Photos (#,Name): 7-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: Same

Easting: Same

Spring Source Description Sourdough lower spring source

Spring Sampling Point Description No Sample, Q < 250 mL/min

Spring Flow Rate (gpm) 200 mL/min = 0.053 gpm (Volume: 200 mL Time: 60 s)

Water Quality

Sample Time: NA

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
~~16:35~~								
17:35	200 mL/min	/	/	/	/	/	/	low flow cond.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/23/14

Photos (#,Name): 6-2

Weather: sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: Same

Easting: Same

Spring Source Description Sourdough upper spring source

Spring Sampling Point Description Sampled from discharge to stock tank. Added No. 15 S. tubing to end to create sampleable flow, see picture.

Spring Flow Rate (gpm) 0.085 gpm (Volume: 320 mL Time: 60 sec)

Water Quality

Sample Time: 16:50

Field Filtered? Y ~~N~~ per WP

Samples Filtered: ~~per WP~~

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:45	320 mL/min	6.92	318	382	16.0	5.2	61%	
16:50								collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/23/14 Photos (#,Name): 1-2

Weather: sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Twin Springs North source

Spring Sampling Point Description stock tank north of Twin springs camp ground. Sampled from discharge feeding tank.

Spring Flow Rate (gpm) 1.42 gpm (Volume: 1 L Time: 11.2 sec)

Water Quality

Sample Time: 11:25

Field Filtered? Y ____ N ~~____~~ per WP

Samples Filtered: ~~____~~ per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E.A.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:05		7.32	364	432	15.6	1.9 mg/L	23%	clear no odor
11:25								collected sample

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/23/14 Photos (#,Name): 2-2

Weather: Sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: Same Easting: Same

Spring Source Description Twin Springs source

Spring Sampling Point Description Sampled from discharge to southern stock tank, south of campground.

Spring Flow Rate (gpm) 5.49 gpm (Volume: 5 gal Time: 54.6 sec)

$\left(\frac{5\,gal}{54.6\,s}\right)\left(\frac{60\,s}{1\,min}\right) = 5.49\ gpm$

Water Quality

Sample Time: 12:15

Field Filtered? Y ___ N ~~—~~ per W.P.

Samples Filtered: ~~—~~ per W.P.

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y X N ___

* "~~Twin Springs North~~ Twin Springs South Duplicate" at 12:25

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:05	5gal/54.6s	7.40	351	427	15.7	7.5 mg/L	92%	clear, no odor
12:15								collected samples
12:25								collected duplicate
12:50								Hg trip blank

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Roe

Date: 6/23/14 Photos (#,Name): 3-2

Weather: Sunny warm windy

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Spring Source Description Whiskey Spring Source

Spring Sampling Point Description Sampled from discharge into stock tank (tractor tire).

Spring Flow Rate (gpm) 0.77 gpm (Volume: 1 L Time: 20.6 sec)

Water Quality

Sample Time: 14:00

Field Filtered? Y ~~N~~ per WP

Samples Filtered: ~~per WP~~

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: S.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:40	12/20.65	7.54	449	519	17.2	5.1 mg/L	63%	clear, no oder.
14:00								collected samples

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Dry Creek Arm Page No.: 1 of 1

Sampling Location Name: Dry Creek arm of Owyhee Lake

Personnel: Erik Boe

Date: 6/23/14 Photos (#,Name): 5-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: ~~Sam~~ Same Easting: Same

Notes Owyhee rec recieded ~ 200 yds west of sample location

Flow Rate: NA **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 15:20

Field Filtered? Y ~~N~~ per WP

Samples Filtered: per WP

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: [signature]

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:15	8.57	263	275	22.8	8.7	112 %	
15:20							collected sampler

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Leslie Gulch Page No.: 1 of 1

Sampling Location Name: Leslie Gulch sample site at Owyhee Lake/River

Personnel: Erik Boe

Date: 6/19/14 Photos (#,Name): 1-2

Weather: Sunny, clear skies, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: 4796517 Easting: 473434

Notes Owyhee Lake is low, river flows/conditions at Leslie Gulch. Water is turbid.

Flow Rate: unknown, but flowing **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 12:30

Field Filtered? Y ___ N ___ per W.P.

Samples Filtered: ___ per W.P.

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: E M. J

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:15	8.59	306	351	18.2	8.0	99 %	Meas. Parameters
12:30							Collected Samples

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Negro Rock Creek Page No.: 1 of 1

Sampling Location Name: Small waterfall on negro creek (same as before)

Personnel: Erik Bee

Date: 6/24/14 Photos (#,Name): 2-2

Weather: Sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Notes Negro rock creek is at lower flows.

Flow Rate: 5-10 gpm **Flow Rate Measurement Desc:**

Flow Units: gpm visual estimate

Water Quality

Sample Time: 10:55

Field Filtered? Y ___ N ~~per WP~~

Samples Filtered: ~~per WP~~

Equip Blank Set Collected? Y ___ N X

Transfer Blank Set Collected? Y ___ N X

Duplicate Set Collected? Y ___ N X

Sampler Signature: E.R.

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:30	7.35	393	490	14.6	6.6	78%	
10:55							collected sample

flow ~ 5 gal @ 10 sec

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Owyhee River DS Page No.: 1 of 1

Sampling Location Name: Owyhee River Site Down stream of Owyhee Dam

Personnel: Erik Bae

Date: 6/19/14 Photos (#,Name): 2-2

Weather: sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: 4835852 Easting: 480990

Notes Owyhee River flowing, lower flows than observed in Leslie Gulch earlier in the day. Fly fishermen approximately 100 yards upstream, and around 50 yards down stream of site.

Flow Rate: NA **Flow Rate Measurement Desc:** NA

Flow Units: NA

Water Quality

Sample Time: 15:45

Field Filtered? Y ~~N~~ per WP.

Samples Filtered: ~~per WP.~~

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: [signature]

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:30 ~~3:30 pm~~	8.81	230	~~285~~	14.3	10.4	116 %	
15:45 ~~3:45 pm~~			289				collected sample

Grassy Mountain Surface Water Monitoring Sampling Form

Surface Water Name: Twin Springs Creek Page No.: 1 of 1

Sampling Location Name: Twin Springs creek ~~north of~~ upstream of Dry Creek confluence.

Personnel: Erik Bae

Date: 6/23/14 Photos (#,Name): 4-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: same Easting: same

Notes Dry

Flow Rate: **Flow Rate Measurement Desc:**

Flow Units:

Water Quality

Sample Time: Equip Blank Set Collected? Y ___ N ✓

Field Filtered? Y ___ N ___ Transfer Blank Set Collected? Y ___ N ✓

Samples Filtered: Duplicate Set Collected? Y ✓ N ___

Sampler Signature:

Time	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:55	✓	✓	✓	✓	✓	✓	Dry

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 470397

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.2

WL Meas Point Desc: top of cap on 4" = 2.04' AGS

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____ ~~OBW~~ NEW 1163

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:35	164.52							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-25-14

Photos (#,Name): N

SPF Sounder #: SPF 200 EWL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835591

Weather:

Easting: 470562

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 3.401

Drop Pipe Diam (in): ____

WL Meas Point Desc: top surf casing 4" casing is 0.17' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N ____ OSOW

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
18:05	227.07							EWL from top of surf casing

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: ~~[illegible]~~ 6-27-14

SPF Sounder #: SPF 300 EWG

Sounder Correction: None

Weather: Cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top of 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N ____ ~~[illegible]~~ new lock 1163

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835616

Easting: 468339

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:53	140.67							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-25-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835556

Weather: cloudy, warm

Easting: 471320

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): ____

WL Meas Point Desc: top of 2" = 2.10' AGS (0.34' b/w surf & MP)

Notes: ____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N ____ 3400

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:27	77.65							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-25-14

Photos (#,Name): N

SPF Sounder #: ~~SPF800ENG~~ SPF800ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835714

Weather: cloudy warm

Easting: 470996

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.72

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 4" = 2.4' AGS 0.38' blw surface casing

Notes: _____

Const Depth [ft, BMP]: 700

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:38	619.60							SWL

*-Supplementary to official Q2 sampling on 6/25/14
-Slug test with distilled water (10 gal) to see if mw is plugged

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762*
Page No.: 1 of 1
Personnel: Erik Boe
Date: 6/30/14
Photos (#,Name): —
SPF Sounder #: SPF-WL1000-01
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: _____
Northing: known
Weather: sunny, warm, light wind
Easting: known
Wat Lev Transducer Download? Y ~~N~~ NA
Pump Description
Well Description
Permanent: _____ Temporary: NA
Surface Casing Diam (in): 8 ~~NA~~
Type: _____ HP: _____
Well Casing Diam (in): 4
Setting Depth (ft): _____
Surface Casing Height AGL (ft): 2.771
Drop Pipe Diam (in): _____
WL Meas Point Desc: top of 4" = 2.4 AGS
Notes: WL Mon well
Const Depth [ft, ~~BMP~~]: 700
Water Quality
Locked? Y ✓ N _____
Sample Time: _____ NA
Well Condition: No change
Field Filtered? Y _____ N _____
Casing Purge
Samples Filtered: _____
3x Casing Volume (gal): _____ NA
Equip Blank Collected? Y _____ N _____
Flow Rate (gpm): _____
Transfer Blank Collected? Y _____ N _____
Required Purge Time (min): _____
Duplicate Set Collected? Y _____ N _____
Note: conducting slug test w/ distilled water to determine if 59762 is plugged.
Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:55	619.91							SWL
11:07								begin input of 10 gal slug (distilled water)
11:11								end input of slug
11:12	619.73							
11:13	619.87							
11:15	619.73							
11:20	619.90							
11:35	619.90							End test, inj of slug was quite fast.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4635103

Easting: 0469034

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8'

WL Meas Point Desc: top of 4" = 2.2' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____ 3246

Well Condition: good - conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:16	273.08							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 6-27-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: Cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top of 2", 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N ____ ~~3400~~ new lock 1163

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468001

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:08	57.34							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Bull Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 6/25/14
Photos (#,Name): 6-2
Weather: overcast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4831334 Easting: 464249

Spring Source Description Bull Spring Source

Spring Sampling Point Description open discharge from ~1" pipe into stock tank.

Spring Flow Rate (gpm) 0.73 gpm (Volume: 930 mL Time: 20.3 sec)

$\left(\frac{0.930 L}{20.3 s}\right) 15.85 = 0.73$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:50	0.73							clear, no odor.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Darky Rock Well

Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/30/14

Photos (#,Name): 5-2

SPF Sounder #: —

Sounder Correction: —

GPS Coord. (UTM 11N, NAD83)

Northing: 4839673

Easting: 465168

Weather: Sunny, warm and windy

Wat Lev Transducer Download? Y _____ N X

Pump Description

Flowing well

Permanent: _____ Temporary: 0

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Well Description

Known

Surface Casing Diam (in): _____

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: _____

Const Depth [ft, BMP]: _____

Locked? Y _____ N X

Well Condition: no change

Water Quality

NA

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

NA

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:25	—	1.0L/1.9sec	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Boundary Spring Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/25/14 Photos (#,Name): 6-2

Weather: cloudy, rain,

GPS Coord. (UTM 11N, NAD83)

Northing: 4833021 Easting: 477444

Spring Source Description unknown

Spring Sampling Point Description Sampled from 1¼" pipe that discharges to the ~10' DIA tractor tire stock tank.

Spring Flow Rate (gpm) 1.02 gpm (Volume: 1L Time: 15.6 sec)

$\left(\frac{1L}{15.6s}\right) 15.85 = 1.02$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:45	1.02							clear, no odor

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Flowing Well

Personnel: Erik Boe

Date: 6/30/14

SPF Sounder #:

Sounder Correction: 5

Weather: Sunny and warm

Wat Lev Transducer Download? Y _____ N X

Well Description

Surface Casing Diam (in):

Well Casing Diam (in):

Surface Casing Height AGL (ft):

WL Meas Point Desc:

Const Depth [ft, BMP]:

Locked? Y _____ N X

Well Condition: Flowing

Casing Purge

3x Casing Volume (gal):

Flow Rate (gpm):

Required Purge Time (min):

Sampler Signature:

Page No.: 1 of 1

Photos (#,Name): 6-4

GPS Coord. (UTM 11N, NAD83)

Northing: 4840435

Easting: 463722

Pump Description

Permanent: _____ Temporary: Artesian

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:45	Artesian	1L/3.2sec	/	/	/	/	/	Clear, no odor.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Central Grassy Mtn Spring Page No.: 1 of 1

Personnel: Erik Bot

Date: 6/25/14 Photos (#,Name): 5-1

Weather: cloudy, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: 4832863 Easting: 472326

Spring Source Description Unknown

Spring Sampling Point Description NA

Spring Flow Rate (gpm) ____ (Volume: ____ Time: ____)

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:00	DRY							Dry

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Grassy Mountain Spring Page No.: 1 of 1

Personnel: Erik Bol

Date: 6/25/14 Photos (#,Name): 3-3

Weather: cloudy, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4832892 Easting: 472614

Spring Source Description East Grassy Mtn Spring source.

Spring Sampling Point Description mud puddle ~ 4' wide by ~30' long.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ✓ N _____

Samples Filtered: ✓

Equip Blank Set Collected? Y ✓ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:05	NA							Cow and deer tracks in mud.

472119
4832892

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: West Grassy Mtn Spring Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/25/14 Photos (#,Name): 4-3

Weather: cloudy, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4832892 Easting: 472614

Spring Source Description West Grassy Mtn Spring, Dry

Spring Sampling Point Description NA

Spring Flow Rate (gpm) ____ (Volume: ____ Time: ____)

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:40	DRY							

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Reservoir Spring Page No.: 1 of 1

Personnel: Erik Bor

Date: 6/25/14 Photos (#,Name): 9-2

Weather: overcast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4841110 Easting: 471328

Spring Source Description unknown

Spring Sampling Point Description NA, no water flowing visibly. Water level in tractor tire stock tank is ~3" below lip on northern side of tank

Spring Flow Rate (gpm) NA (Volume: ~~_____~~ Time: ~~_____~~)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:35	~	~	~	~	~	~	~	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: Erik Rae

Date: 6/30/14 Photos (#,Name): 2-4

Weather: Sunny, warm

GPS Coord. (UTM 11N, NAD83)

Northing: 4838262 Easting: 466659

Spring Source Description Negro Rock Spring source.

Spring Sampling Point Description tractor tire stock tank at brim with water, overflow dumping to channel that flows (low flow w/ spm) down to northwest.

Spring Flow Rate (gpm) NA* (Volume:_____ Time:_____)

* unable to measure.

Water Quality

Sample Time: _____

Field Filtered? Y ~~/~~ N _____

Samples Filtered: ~~_____~~

Equip Blank Set Collected? Y ~~/~~ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E M R

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:50	~	~	~	~	~	~	~	clear

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Canyon Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/30/14 Photos (#,Name): 6-1

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4842227 Easting: 466324

Spring Source Description Negro Rock Canyon Spring

Spring Sampling Point Description Spring water emenating from ground and pooling with nominal velocity at source.

Spring Flow Rate (gpm) Stagnate (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y / N

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N /

Transfer Blank Set Collected? Y / N _____

Duplicate Set Collected? Y / N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:15	stagnant	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Northwest Boundary Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/30/14 Photos (#,Name): 7-2

Weather: Sunny, warm, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4842685 Easting: 465310

Spring Source Description Dry

Spring Sampling Point Description Dry

Spring Flow Rate (gpm) / (Volume:_____ Time:_____)

Water Quality

Sample Time: /

Field Filtered? Y / N

Samples Filtered: /

Equip Blank Set Collected? Y_____ N /

Transfer Blank Set Collected? Y / N_____

Duplicate Set Collected? Y / N_____

Sampler Signature: E. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:45	DRY	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxbow ~~SR~~ Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/25/14

Photos (#,Name): 2-2

Weather: cloudy, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4830328 Easting: 472209

Spring Source Description Oxbow spring source, spring box, Water flowing in spring box similar rate as stock tank. Only ~2" of water/scum at bottom of spring tank

Spring Sampling Point Description Measured flow from 1½" discharge line to stock tank (large DIA tractor tire). Nominal amt of water in stock tank (~2")

Spring Flow Rate (gpm) 0.27 gpm (Volume: 1L Time: 59.4 sec)

$\left(\frac{1L}{59.4\,s}\right)(15.85) = 0.27$ gpm

Water Quality

Sample Time: ~~11:30~~

Field Filtered? Y ____ N ____

Samples Filtered: ~~1L~~

Equip Blank Set Collected? Y ____ N ~~____~~

Transfer Blank Set Collected? ~~Y~~ ____ N ____

Duplicate Set Collected? ~~Y~~ ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:30	1L/59.4s							clear, no odor

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxyoke Spring Page No.: 1 of 1

Personnel: Erik Bae

Date: 6/25/14 Photos (#,Name): 1-2

Weather: cloudy, windy

GPS Coord. (UTM 11N, NAD83)

Northing: ~~4824499~~ 4829472 Easting: 472335

Spring Source Description Oxyoke spring source

Spring Sampling Point Description Dry, no water

Spring Flow Rate (gpm) Dry (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.R.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:00	DRY							no water in tank

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Red Tank No 3 Page No.: 1 of 1

Personnel: Erik Bor

Date: 6/25/19 Photos (#,Name): 8-2

Weather: overcast, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: 4838475 Easting: 471526

Spring Source Description unknown

Spring Sampling Point Description inlet to tank exposed since wl is ~~6"~~ 9" below top of lip. Could not capture entire flow, so Q is estimate/approximate. Discharge invert is 4" below top of lip.

Spring Flow Rate (gpm) 0.20 gpm (Volume: 230 mL Time: 18.1 sec)

$\left(\frac{0.23\,L}{18.1\,s}\right) 15.85 = 0.20$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:20	230 mL / 18.1							clear, no odor.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: South Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/30/14 Photos (#,Name): 1-3

Weather: Sunny, warm

GPS Coord. (UTM 11N, NAD83)

Northing: 4839296 Easting: 467935

Spring Source Description South Poison Spring source.

Spring Sampling Point Description Water pooling in cut bank.

Spring Flow Rate (gpm) no visible flow (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N/

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:30	/	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Tank E of Negro Rock Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/25/14 Photos (#,Name): 7-2

Weather: overcast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4837399 Easting: 468185

Spring Source Description Suspect this may be well, as I've noticed it on and off.

Spring Sampling Point Description Pipe discharging into tank.

Spring Flow Rate (gpm) 6.89 gpm (Volume: 1L Time: 2.3 sec)

$\left(\frac{1L}{2.3s}\right)15.85 = 6.89$ gpm

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:50								clear, no odor

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: West Whiskey Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/30/14 Photos (#,Name): ~~4-2~~ 4-4

Weather: Sunny warm windy.

GPS Coord. (UTM 11N, NAD83)

Northing: 4839216 Easting: 464027

Spring Source Description West Whiskey Spring source

Spring Sampling Point Description Ponding at spring source ~ 5'x 9' stagnant.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: E Toe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:00	stagnant							

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Wildcat Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 6/30/14 Photos (#,Name): 3-2

Weather: Sunny, warm and windy

GPS Coord. (UTM 11N, NAD83)

Northing: 4839230 Easting: 465341

Spring Source Description Wildcat Spring Source

Spring Sampling Point Description broken down tank with some water pooling in and out of it. See picture

Spring Flow Rate (gpm) no flow (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:20	no flow	—	—	—	—	—	—	—

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6/19/14 ~~10:45~~ 11:45
Calibration Method: 2 - point
Buffers Used: 7 and 10 pH Standards
Slope Deviation:
Electrode Efficiency: 93.6 %
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6/19/14 11:50
Calibration Method: 1 pt
Cell Constant: ~~5.00~~ 5.00 Default? X Yes ____ No
Temperature Coefficient: ~~25~~ 1.91 % Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: ~~12:~~ 6/19/14 12:00
Calibration Method: to air (Auto)
Initial DO Saturation Reading: 100.5 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: S.A.T.

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6/23/14 10:00
Calibration Method: 2 - point
Buffers Used: 7 and 10 pH Stds.
Slope Deviation:
Electrode Efficiency: 95.1 %
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6/23/14 10:10
Calibration Method: 1 pt
Cell Constant: 5.00 Default? X Yes ____ No
Temperature Coefficient: 1.91 % Default? X Yes ____ No
Temperature Reference: 25°C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6/23/14 10:15
Calibration Method: to air, auto
Initial DO Saturation Reading: 100.5 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature: S.A.T.

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6/24/14 8:50
Calibration Method: 2 - point
Buffers Used: pH 7 & 10 standards
Slope Deviation: —
Electrode Efficiency: 95.1
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6/24/14 8:55
Calibration Method: 1 pt
Cell Constant: 5.00 Default? X Yes ____ No
Temperature Coefficient: 1.91 % Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 9:00 6/24/14
Calibration Method: 1 pt in air, auto cal
Initial DO Saturation Reading: 100% (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument:	pH Meter
Manufacturer / Model:	YSI Ecosense pH100
Date / Time of Calibration:	6-25-14 6:20 am
Calibration Method:	2 - point
Buffers Used:	7 / 10
Slope Deviation:	—
Electrode Efficiency:	98.0%
Successful Calibration?	✓ Yes ____ No
If No, List Corrective Action:	
Signature:	[signature]

Instrument:	Conductivity Meter				
Manufacturer / Model:	YSI Ecosense EC300				
Date / Time of Calibration:	6-25-14 6:30 am				
Calibration Method:	known standard				
Cell Constant:	5.00	Default?	✓ Yes	____ No	
Temperature Coefficient:	1.91%	Default?	✓ Yes	____ No	
Temperature Reference:	25 C	Default?	____ Yes	____ No	
Conductivity Standard:	1413 uS/cm grotech				
Conductivity Standard @ 25C:	↓				
Successful Calibration?	✓ Yes	____ No			
If No, List Corrective Action:					
Signature:	[signature]				

Instrument:	Dissolved Oxygen Meter			
Manufacturer / Model:	OxyGuard Handy Polaris 2			
Date / Time of Calibration:	6-25-14 6:40 am			
Calibration Method:	auto			
Initial DO Saturation Reading:	101%			(Should read 100.5%)
Calibration Needed?	____ Yes	✓ No		
Calibration Precision:	✓ Field	____ Normal	____ High	
Successful Calibration? NA	____ Yes	____ No		
If No, List Corrective Action:				
Signature:	[signature]			

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 6-27-14 8:20
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: 9
Electrode Efficiency: 95.5 %
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 6-27-14 8:30
Calibration Method: Known standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 % Default? ✓ Yes ____ No
Temperature Reference: 25 C Default? ✓ Yes ____ No
Conductivity Standard: Oc. Tech
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 6-27-14 8:15
Calibration Method: Auto
Initial DO Saturation Reading: 100 % (Should read 100.5%)
Calibration Needed? ____ Yes ✓ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Q3 2014

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 9-11-14
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cool, windy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4838778
Easting: 476535

Well Description
Surface Casing Diam (in): 6", lower 10"
Well Casing Diam (in): 6"
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: Top coupler = 0.16' above cap
Const Depth [ft, BMP]: 375
Locked? Y ____ N ✓ broken
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 1.5
Setting Depth (ft): 147
Drop Pipe Diam (in): 1.25
Notes: /

Casing Purge
3x Casing Volume (gal): 131
Flow Rate (gpm): 30 (10s)
Required Purge Time (min): 44

Water Quality
Sample Time: 10:21
Field Filtered? Y ✓ N ____
Samples Filtered: Metals + perchl
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:20	80.55							SWL
9:36		30						pump on - water black
9:51	95.07	30	8.87	646	787	15.6	0.5 / 6%	cloudy
10:06	95.53	30	8.70	665	805	15.8	0.2 / 2%	clear
10:21	96.10	30	8.75	680	823	15.9	0.2 / 2%	slightly cloudy
								collected sample @ 10:21

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: SPF 300 ENG 1 9-11-14

Photos (#,Name): N

SPF Sounder #:

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4838740

Weather: breezy & cool

Easting: 470557

Wat Lev Transducer Download? Y ✓ N

Pump Description

Well Description

Permanent: ✓ Temporary:

Surface Casing Diam (in): 8

Type: Grundfos HP: 1.5

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top coupler = 6.26' flow sect casing

Notes:

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N 1163

Sample Time: 11:03

Well Condition: good

Field Filtered? Y ✓ N

Casing Purge

Samples Filtered: Metals * per lab

3x Casing Volume (gal): 566

Equip Blank Collected? Y N ✓

Flow Rate (gpm): 30 (105)

Transfer Blank Collected? Y N ✓

Required Purge Time (min): 19

Duplicate Set Collected? Y N ✓

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:25 SWL	82.24							SWL
10:37	83.08							SWL
10:42								pump on - clear
10:49	90.13	30	8.93	544	656	16.1	1.8 / 20%	slightly cloudy
10:56	90.69	30	8.92	546	656	16.2	0.5 / 6%	slightly cloudy
11:03	90.92	30	8.91	549	660	16.2	0.3 / 3%	collect sample, slightly cloudy

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Personnel: J Thompson

Date: 9-11-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: breezy & warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836380

Easting: 469927

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8

WL Meas Point Desc: top of coupler = 0.18' blw surf casing

Const Depth [ft, BMP]: 45

Locked? Y ✓ N ____ 3246

Well Condition: good

Pump Description

Permanent: ✓ Temporary: ____

Type: Grundfos HP: 0.5

Setting Depth (ft): 42

Drop Pipe Diam (in): 1.25

Notes: ____

Water Quality

Sample Time: 11:53

Field Filtered? Y ✓ N ____

Samples Filtered: metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Casing Purge

3x Casing Volume (gal): 41

Flow Rate (gpm): 3 (1:40)

Required Purge Time (min): 14

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:32	31.80							SWL
11:38								pump on brownish color
11:43	36.35	3	6.72	719	874	15.7	2.3/27%	cloudy
11:48	36.36	3	6.63	729	885	15.8	2.2/25%	clear
11:53	36.38	3	6.66	730	885	15.8	2.2/25%	collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 9-11-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm + breezy

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 471431

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.4'

WL Meas Point Desc: top of well cap = 3.38' AGS

Const Depth [ft, BMP]: 550'

Locked? Y ✓ N _____ 1103

Well Condition: good

Pump Description

Permanent: ✓ Temporary: _____

Type: grundfos HP: 1.5?

Setting Depth (ft): unk

Drop Pipe Diam (in): 1.25

Notes: _____

Water Quality

Sample Time: 14:05

Field Filtered? Y ✓ N _____

Samples Filtered: metals - per lab

Equip Blank Collected? Y _____ N ✓

Transfer Blank Collected? Y _____ N ✓

Duplicate Set Collected? Y _____ N ✓

Casing Purge

3x Casing Volume (gal): 2193

Flow Rate (gpm): 30 (10s)

Required Purge Time (min): 73

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:34	56.73							SWL
12:50								pump on clear
13:10	113.64	30	8.19	309.7	350.7	18.9	2.2/27%	clear
13:30	122.78	30	8.17	309.9	350.1	19.0	2.3/28%	clear
13:50	129.54	30	8.12	310.9	351.3	19.0	2.4/30%	clear
14:05	132.15	30	8.11	311.2	351.9	19.0	2.5/31%	collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-11-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835044

Weather: warm + breezy

Easting: 471460

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ✓ Temporary: ____

Surface Casing Diam (in): 12

Type: Grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 105

Surface Casing Height AGL (ft): 3.5

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of coupler = 3.68' AGS = 0.17' above well cap

Notes: ____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N ____ 1663

Sample Time: 14:34

Well Condition: ____

Field Filtered? Y ✓ N ____

Casing Purge

Samples Filtered: metals & perc lab

3x Casing Volume (gal): 204

Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 20 (15s)

Transfer Blank Collected? Y ____ N ✓

Required Purge Time (min): 10

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:40	55.30							SWL
14:24								pump on
14:27	66.91	20	7.85	340.2	409.2	16.2	4.8/56%	clear
14:30	67.04	20	7.86	341.1	408.7	16.2	5.0/58%	clear
14:34	67.10	20	7.86	340.1	408.5	16.2	5.1/59%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-11-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835229

Weather: warm & breezy

Easting: 471504

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: ____

Surface Casing Diam (in): 8

Type: grundfos HP: 0.75

Well Casing Diam (in): 4

Setting Depth (ft): 126

Surface Casing Height AGL (ft): 2.9'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top of coupler = 0.22' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N ____ 3246

Sample Time: 15:39

Well Condition: cone pad cracked

Field Filtered? Y ✓ N ____

Casing Purge

Samples Filtered: metals in pur lab

3x Casing Volume (gal): 224

Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 26 (1 l/s)

Transfer Blank Collected? Y ✓ N ____ Hg transfer

Required Purge Time (min): 9

Duplicate Set Collected? Y ____ N ✓ 15:45

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:06	95.21							SWL
15:30								pump on - brown
15:33	102.90	26	7.76	304.0	367.2	16.0	3.1 / 37%	clear
15:36	103.08	26	7.86	304.5	367.5	16.0	3.5 / 40%	clear
15:39	103.10	26	7.90	304.4	367.3	16.0	3.3 / 39%	collected samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 9-11-14

SPF Sounder #: SPF300ENG

Sounder Correction: None

Weather: warm, windy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 471497

Pump Description

Permanent: ✓ Temporary: ____

Type: unk HP: unk

Setting Depth (ft): unk

Drop Pipe Diam (in): unk

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.3

WL Meas Point Desc: hole in casing = 0.22' below top plate

Const Depth [ft, BMP]: 203

Locked? Y ____ N ✓ broken

Well Condition: good

Notes: ____

Water Quality

Sample Time: 17:00

Field Filtered? Y ✓ N ____

Samples Filtered: metals & per lab

Equip Blank Collected? Y ____ N ✓

Transfer Blank Collected? Y ____ N ✓

Duplicate Set Collected? Y ____ N ✓

Casing Purge

3x Casing Volume (gal): 515

Flow Rate (gpm): 9 (335)

Required Purge Time (min): 57

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:12	89.18							SWL
16:03								pump on - cloudy
23	155.27	9	7.84	314.6	379.7	16.0	1.1 / 13%	clear
43	175.24	9	7.90	311.2	374.2	16.2	1.2 / 14%	clear
17:00	183.16	9	7.89	309.9	370.6	16.4	1.4 / 17%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761
Personnel: J Thompson
Date: 9-15-14
SPF Sounder #: SDF300 ENG
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835286
Easting: 471532

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top coupler = 0.19' blw casing
Const Depth [ft, BMP]: 118
Locked? Y ✓ N ____ 1163
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: grundfos HP: 0.5
Setting Depth (ft): 105
Drop Pipe Diam (in): 1.25
Notes: ____

Water Quality
Sample Time: 9:51
Field Filtered? Y ✓ N ____
Samples Filtered: nitrate + nitrite
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Casing Purge
3x Casing Volume (gal): 62
Flow Rate (gpm): 10 (30s)
Required Purge Time (min): 6

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:33	89.29							SWL
9:45								pump on - clear
47	89.40	10	7.83	328.8	398.7	15.8	6.3 / 78%	clear
49	89.43	10	7.82	328.2	398.8	15.7	6.1 / 73%	clear
9:51	89.44	10	7.82	327.7	398.3	15.7	6.6 / 78%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-15-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835898

Weather: warm, clear

Easting: 470406

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ✓ Temporary: ____

Surface Casing Diam (in): —

Type: Grundfos HP: 0.5

Well Casing Diam (in): 6

Setting Depth (ft): 168

Surface Casing Height AGL (ft): 0.85'

Drop Pipe Diam (in): 1.25

WL Meas Point Desc: top coupler = 0.19' above 6"

Notes: ____

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N ____ 3640

Sample Time: 11:55

Well Condition: good

Field Filtered? Y ✓ N ____

Casing Purge

Samples Filtered: Metals & perlab

3x Casing Volume (gal): 6X = 164

Equip Blank Collected? Y ____ N ✓

Flow Rate (gpm): 5 (60s)

Transfer Blank Collected? Y ____ N ✓

Required Purge Time (min): 32

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:18	156.28							SWL
11:23								pump on - brown
11:33	161.67	5	7.54	1.135	1.386	16.0	1.5 / 17%	brownish
11:43	162.07	5	7.29	1608	1937	16.1	0.4 / 5%	cloudy
11:55	162.30	5	7.19	1893	2282	16.1	0.1 / 2%	collect sample

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Personnel: J Thompson
Date: 9-15-14
SPF Sounder #: SPF300 ENG
Sounder Correction: none
Weather: warm & clear
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835105
Easting: 469094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 2.92
WL Meas Point Desc: top coupler = 0.21' blw surf casing
Const Depth [ft, BMP]: 323
Locked? Y ✓ N ____ 3246
Well Condition: good - conc pad cracked

Pump Description
Permanent: ✓ Temporary: ____
Type: Grundfos HP: 0.75
Setting Depth (ft): 322
Drop Pipe Diam (in): 1.25
Notes: ____

Water Quality
Sample Time: 13:43
Field Filtered? Y ✓ N ____
Samples Filtered: Metals & perchl
Equip Blank Collected? Y ____ N ✓ 14:00
Transfer Blank Collected? Y ✓ N ____ Hg trip @ 13:
Duplicate Set Collected? Y ✓ N ____ @ 13:53

Casing Purge
3x Casing Volume (gal): 200
Flow Rate (gpm): 3 (1:40)
Required Purge Time (min): 67

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:22	280.08							SWL
12:36								Pump on - brown
12:56	—	3	7.60	1584	1614	24.0	0.3 / 3%	clear
13:16	—	3	7.65	1665	1689	24.3	0.6 / 8%	clear
13:36	—	3	7.69	1696	1715	24.5	0.9 / 12%	clear
13:43	—	3	7.69	1691	1707	24.5	0.9 / 12%	Sample collection

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop
Page No.: 1 of 1
Personnel: J Thompson
Date: 9-15-14
Photos (#,Name): N
SPF Sounder #: SPF300 ENG
Sounder Correction: None
Weather: hot + clear
Wat Lev Transducer Download? Y ____ N ✓

GPS Coord. (UTM 11N, NAD83)
Northing: 4833564
Easting: 466562

Well Description
Surface Casing Diam (in): NA
Well Casing Diam (in): 12
Surface Casing Height AGL (ft): 0.53' h/w drum top
WL Meas Point Desc: top 6"
Const Depth [ft, BMP]: 482
Locked? Y ____ N ✓
Well Condition: good

Pump Description
Permanent: ✓ Temporary: ____
Type: unk HP: 1.0
Setting Depth (ft): 167?
Drop Pipe Diam (in): unk
Notes: existing

Casing Purge
3x Casing Volume (gal): 6633
Flow Rate (gpm): 15 (20s)
Required Purge Time (min): 442

Water Quality
Sample Time: 16:40
Field Filtered? Y ✓ N ____
Samples Filtered: metals & perchlorate
Equip Blank Collected? Y ____ N ✓
Transfer Blank Collected? Y ____ N ✓
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:38	109.46							SWL
14:40								pump on - clear
15:10	142.22	15	8.21	369.9	417.1	19.1	4.4 / 54%	clear
15:40	156.51	15	8.28	364.1	408.2	19.4	3.2 / 40%	clear
16:10	159.58	15	8.37	353.9	393.7	19.6	2.9 / 37%	clear
16:40	159.70	15	8.45	356.6	394.4	20.0	3.3 / 41%	collect samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1
Personnel: Erik Boe
Date: 9/16/14
SPF Sounder #: NA
Sounder Correction:
Weather: Sunny and very windy
Wat Lev Transducer Download? Y ____ N ____

Page No.: 1 of 1
Photos (#,Name): 7-2
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Well Description
Surface Casing Diam (in): no change
Well Casing Diam (in):
Surface Casing Height AGL (ft):
WL Meas Point Desc:
Const Depth [ft, BMP]:
Locked? Y ____ N ____
Well Condition: no changes

Pump Description
Permanent: X Temporary: NA, Artesian flow
Type: HP:
Setting Depth (ft):
Drop Pipe Diam (in):
Notes:

Water Quality
Sample Time: Per W.P.
Field Filtered? Y ____ N ____
Samples Filtered:
Equip Blank Collected? Y ____ N X
Transfer Blank Collected? Y ____ N X
Duplicate Set Collected? Y ____ N X

Casing Purge
3x Casing Volume (gal):
Flow Rate (gpm): Flowing 15.85(1L/12.0 sec) = 1.32 gpm
Required Purge Time (min): NA

Sampler Signature: E.T.B.

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:00	Flowing	1L/12.5	7.81	550	625	18.6	22% / 1.6 mg/L	clear, no odor
~~17:20~~								
17:20								Collected Samples

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm & clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.8'

WL Meas Point Desc: top 44 = 2.2' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____ 3246

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): (W)

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 0469034

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:27	273.19							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 9-11-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm + breezy

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.2

WL Meas Point Desc: top of 4" = 2.04' AG

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____ 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 470397

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:44	~~164.60~~							SWL
	164.60							

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF 800 ENG

Sounder Correction: none

Weather: cool & calm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 470996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top of 4" = 2.4' AGS 0.38' blw surf casing

Const Depth [ft, BMP]: 700

Locked? Y ✓ N ____ 3246

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:52	619.79							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.41

WL Meas Point Desc: top 2" = 0.34' below surface casing

Const Depth [ft, BMP]: 915

Locked? Y ✓ N _____ 3400

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835556

Easting: 471320

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: /

Water Quality

Sample Time: _____

Field Filtered? Y / N _____

Samples Filtered: /

Equip Blank Collected? Y / N _____

Transfer Blank Collected? Y / N _____

Duplicate Set Collected? Y / N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:09	77.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): square - 6"x6"

Well Casing Diam (in): 1" ID

Surface Casing Height AGL (ft): 1.90'

WL Meas Point Desc: top 1/4 = 0.41' blw top of surf casing

Const Depth [ft, BMP]: ~~unk~~ 508

Locked? Y ✓ N _____ Fortress AD #

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): Y (24)

GPS Coord. (UTM 11N, NAD83)

Northing: 4714094

Easting: 483589

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:25	45.38							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF300ENG

Sounder Correction: None

Weather: warm + cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top steel casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N ____ 0502

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:44	227.14							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: Warm & cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): 4

GPS Coord. (UTM 11N, NAD83)

Northing: 470636

Easting: 4835060

Well Description

Surface Casing Diam (in): square 6"x6"

Well Casing Diam (in): 1¼ ID

Surface Casing Height AGL (ft): 2'

WL Meas Point Desc: top 1¼ = 0.06' blw surf, casing

Const Depth [ft, BMP]: ~~unk~~ 765

Locked? Y ✓ N ____ Fortress no #

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:00	66.75							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: hot + clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835616

Easting: 468339

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N ____ 1163

Well Condition: good condition

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:10	140.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: MWS-11 = 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-15-14

Photos (#,Name): Y

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4434509

Weather: hot + clear

Easting: 467928

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75' above conc

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4" = 0.79' blw surf casing

Notes: _____

Const Depth [ft, BMP]: ~~talk~~ 405

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:16	140.68							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: hot & clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468007

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top 2", 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N ____ 1163

Well Condition: cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:33	57.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: MWS-10 = 59768

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPE 300 ENG

Sounder Correction: none

Weather: hot & clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.94'

WL Meas Point Desc: top 4" = 0.51' blw surf casing

Const Depth [ft, BMP]: unk 25

Locked? Y ✓ N _____ 3246

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4837199

Easting: 421257

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:54	17.10							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Personnel: J Thompson

Date: 9-15-14

SPF Sounder #: SPF300ENG

Sounder Correction: none

Weather: hot & clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6"

Well Casing Diam (in): 2"

Surface Casing Height AGL (ft): 1.90' above conc

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Const Depth [ft, BMP]: 265

Locked? Y ✓ N _____

Well Condition: good - conc. pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): Y

GPS Coord. (UTM 11N, NAD83)

Northing: 4698399

Easting: 483678 9

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
18:18	191.78							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Eric Bae

Date: 9/17/14 Photos (#,Name): 3-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description unknown

Spring Sampling Point Description Sampled from water discharging into large diameter stock tank

Spring Flow Rate (gpm) 0.11 (Volume: 250mL Time: 36.7sec)

$\left(\frac{0.250\,L}{36.7\,s}\right) 15.85 = 0.11$ gpm

Water Quality

Sample Time: 12:40

Field Filtered? Y ____ N ~~____~~ per WP

Samples Filtered: ____ per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E. M. T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:05	250mL/36.7s	7.23	479	506	22.3	4.2	56%	clear, no odor
12:40								Collected Samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Bor

Date: 9/17/14 Photos (#,Name): 2-2

Weather: overcast and light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description whiskey spring source

Spring Sampling Point Description Sampled from water discharging into upper most stock tank at Government Corral.

Spring Flow Rate (gpm) 1.93 (Volume: 1L Time: 8.2 sec)

$\left(\frac{1L}{8.2s}\right)(15.8) = 1.93$

Water Quality

Sample Time: 11:40

Field Filtered? Y ~~N~~ per WP

Samples Filtered: per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y X N ____ @ 11:50

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20	1L/8.2sec	7.65	376	437	17.5	7.4	92%	clear, no odor
11:40								collected sample
11:50								collected duplicate

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: Erik Bos

Date: 9/17/14 Photos (#,Name): 5-2

Weather: Sunny windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Grassy Spring Source

Spring Sampling Point Description Measured the flow from broken HDPE line. Q << 250 mL/min so no sample collected.

Spring Flow Rate (gpm) 0.007 drip flow (Volume: 13mL Time: 28 sec)

$\left(\frac{0.013\,L}{28\,s}\right) 15.85 = 0.007$ gpm

Water Quality

Sample Time: NA

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E. A.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:30	13mL/28sec							drip flow, Q < 250mL/min
								∴ no sample collected.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 9/17/14
Photos (#,Name): 4-2
Weather: Sunny and windy
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description Lowe Spring Source.

Spring Sampling Point Description Broken HDPE line. Q << 250 mL/min so no sample collected

Spring Flow Rate (gpm) 0.001 (Volume: 10mL Time: 141 sec)

$\left(\frac{0.010L}{141\,s}\right)15.85 =$

Water Quality

Sample Time: NA
Field Filtered? Y ____ N ____ N/A
Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____ NA
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:20	10mL/141sec							Q< 250 mL/min
								∴ no samples
								collected

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 9/16/14

Photos (#,Name): 6-2

Weather: Sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Poison Spring source.

Spring Sampling Point Description Sampled from crack in 2'x2' concrete well/structure. Water Level was 3.25" below north edge of well

Spring Flow Rate (gpm) ~1 gpm "visual estimate" (Volume:_____ Time:_____)

Water Quality

Sample Time: 16:25

Field Filtered? Y ____ N ____ per WP

Samples Filtered: _____ per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:05	~1	9.31	465	498	21.4	3.1	45%	
16:25								Collected sample

approx 2" below top
~1 gpm

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 9/17/14 Photos (#,Name): 1-7

Weather: overcast and light wind

GPS Coord. (UTM 11N, NAD83)

Northing: 4839247 Easting: 0474044

Spring Source Description Sagebrush spring (same as previous)

Spring Sampling Point Description Pipe feeding original fiberglass stock tank was removed, and re-routed to large diameter (~10 ft) tractor tire tank approximately 50 ft down gradient. Sampled from discharge in center of tank. ~3 ft below previous elevation.

Spring Flow Rate (gpm) 0.67 gpm (Volume: 1L * Time: 23.85)

*Could not capture all water in cup ~95%.

Water Quality

Sample Time: 13:45

Field Filtered? Y ~~N~~ per WP

Samples Filtered: ~~per WP.~~

Equip Blank Set Collected? Y X N

Transfer Blank Set Collected? Y X N

Duplicate Set Collected? Y N X

X merc trip/transfer @ 14:55

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:25	~~1L~~ 2.98	7.56	346	413	16.5	6.4	64 %	clear, no odor.
13:45								collected sample
14:20								Equipment Blank
14:50								Transfer Blank
14:55								Merc Transfer

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower Page No.: 1 of 1

Personnel: Erik Boe

Date: 9/16/14 Photos (#,Name): 5 - 3

Weather: Sunny warm windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sourdough lower source

Spring Sampling Point Description Measured water drizzling out of pipe into concrete stock tank. Q < 250 mL/min so not sampling.

Spring Flow Rate (gpm) 0.027 gpm (Volume: 250 mL Time: 149.05 2:29 (m:s))

Water Quality

Sample Time: NA

Field Filtered? Y ____ N NA

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:55	250mL/149s	—						Q < 250 mL/min
								no sample

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper

Page No.: 1 of 1

Personnel: Erik Boe

Date: ~~Sunny and windy~~ 9/16/14

Photos (#,Name): 4 - 2

Weather: Sunny and windy

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Sourdough upper source

Spring Sampling Point Description Sample from water discharging into Sourdough upper stock tank

Spring Flow Rate (gpm) 0.095 gpm (Volume: 250 mL Time: 41.7 s)

Water Quality

Sample Time: 14:15

Field Filtered? Y ~~N~~ per W.P.

Samples Filtered: per W.P.

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: [signature]

14:00 Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
~~14:15~~	250mL/41.7	7.04	326	380	17.5	5.2	72%	
14:15								collected samples.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 9/16/14 Photos (#,Name): 1-2

Weather: Sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Twin Springs source

Spring Sampling Point Description sampled from water discharging into stock tank.

Spring Flow Rate (gpm) 2.69 gpm (Volume: 1L Time: 5.9 s)

Water Quality

Sample Time: 11:00

Field Filtered? Y — N — per WP

Samples Filtered: — per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: E T. [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	14/5.9s	7.40	373	456	15.5	5.1	62%	clear, no odor.
11:00								Collected samples

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South
Page No.: 1 of 1
Personnel: Erik Boe
Date: 9/16/14
Photos (#,Name): 2-2
Weather: Sunny & windy
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description Twin Springs source

Spring Sampling Point Description Sampled from discharge flowing into Southernmost stock tank at Twin Springs

Spring Flow Rate (gpm) 3.45 gpm (Volume: 1L Time: 4.6s)

Water Quality

Sample Time: 12:00
Field Filtered? Y ___ N ~~—~~ per WP
Samples Filtered: ~~—~~ per WP
Equip Blank Set Collected? Y ___ N X
Transfer Blank Set Collected? Y ___ N X
Duplicate Set Collected? Y ___ N X

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:40	1L/4.6s	7.37	367	443	16.1	5.0	61%	
12:00								Collected sample

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 9/16/14 Photos (#,Name): 3-1

Weather: Sunny and windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Whiskey Spring source

Spring Sampling Point Description water flowing from pipe into whiskey stock tank.

Spring Flow Rate (gpm) 0.83 gpm (Volume: 1L Time: 19.0 s)

Water Quality

Sample Time: 13:15

Field Filtered? Y — N — per WP

Samples Filtered: — per WP

Equip Blank Set Collected? Y ____ N X

Transfer Blank Set Collected? Y ____ N X

Duplicate Set Collected? Y ____ N X

Sampler Signature: S.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:55	14/19.5s	7.50	470	538	18.4	6.0	78%	
13:15								Collected samples

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 9-11-14
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 97.2
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 9-11-14
Calibration Method: Known Standard
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91% Default? ✓ Yes ____ No
Temperature Reference: 25.0 C Default? ✓ Yes ____ No
Conductivity Standard: Geo Tech June 15
Conductivity Standard @ 25C: 1413 mS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action: ____
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 9-11-14 9:00
Calibration Method: auto
Initial DO Saturation Reading: 100% (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No reads 100%
If No, List Corrective Action: ____
Signature: [signature]

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 9-15-14 9:23
Calibration Method: 2 - point
Buffers Used: 7 / 10
Slope Deviation: —
Electrode Efficiency: 97.4
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 9-15-14 9:25
Calibration Method: known std
Cell Constant: 5.00 Default? ✓ Yes ____ No
Temperature Coefficient: 1.91 Default? ✓ Yes ____ No
Temperature Reference: 25.0 Default? ✓ Yes ____ No
Conductivity Standard: GeoTech June 2015
Conductivity Standard @ 25C: 1413 uS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 9-15-14 9:16
Calibration Method: air
Initial DO Saturation Reading: 99.2 (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No 101.7
If No, List Corrective Action:
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 9/17/14 9:50
Calibration Method: 2 - point
Buffers Used: 7 and 10 pH
Slope Deviation:
Electrode Efficiency: 98.4%
Successful Calibration? X Yes ____ No
If No, List Corrective Action:
Signature:

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 9/17/14 10:00
Calibration Method: 1 pt
Cell Constant: 5.2 Default? X Yes ____ No
Temperature Coefficient: ≈1.91 Default? X Yes ____ No
Temperature Reference: 25°C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature:

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 9/17/14 10:05
Calibration Method: 1 pt to air (auto cal)
Initial DO Saturation Reading: 101 (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature:

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Ecosense pH100
Date / Time of Calibration: 9/16/14 10:15
Calibration Method: 2 - point
Buffers Used: 7 & 10 pH
Slope Deviation:
Electrode Efficiency: 98.0 %
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: YSI Ecosense EC300
Date / Time of Calibration: 9/16/14 10:25
Calibration Method: 1 pt
Cell Constant: 5.21 Default? X Yes ____ No
Temperature Coefficient: 1.91 Default? X Yes ____ No
Temperature Reference: 25 °C Default? X Yes ____ No
Conductivity Standard: —
Conductivity Standard @ 25C: 1413 µS
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: OxyGuard Handy Polaris 2
Date / Time of Calibration: 9/16/14 10:00
Calibration Method: Auto Cal to air
Initial DO Saturation Reading: 100.5 % (Should read 100.5%)
Calibration Needed? ____ Yes X No
Calibration Precision: X Field ____ Normal ____ High
Successful Calibration? X Yes ____ No
If No, List Corrective Action: —
Signature: [signature]

Q4 2014

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thomson

Date: 12-16-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cold & calm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): 4N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838778

Easting: 470535

Well Description

Surface Casing Diam (in): 6", lower 10"

Well Casing Diam (in): 6"

Surface Casing Height AGL (ft): 3'

WL Meas Point Desc: top coupler = 0.16' above cap

Const Depth [ft, BMP]: 375

Locked? Y _____ N ✓ broken

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:40	80.35							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4 Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14 Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, clear

Wat Lev Transducer Download? Y ✓ N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838740

Easting: 470557

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top coupler = 0.20' blw surf casing

Const Depth [ft, BMP]: 370

Locked? Y ✓ N 1163

Well Condition: good

Pump Description

Permanent: Temporary:

Type: HP:

Setting Depth (ft):

Drop Pipe Diam (in):

Notes:

Water Quality

Sample Time:

Field Filtered? Y N

Samples Filtered:

Equip Blank Collected? Y N

Transfer Blank Collected? Y N

Duplicate Set Collected? Y N

Casing Purge

3x Casing Volume (gal):

Flow Rate (gpm):

Required Purge Time (min):

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:55	82.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768 (MWS-10)

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SAF 300 EWG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4837199

Weather: cold, foggy

Easting: 471257

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Pump Description

Surface Casing Diam (in): 8

Permanent: _____ Temporary: _____

Well Casing Diam (in): 4

Type: _____ HP: _____

Surface Casing Height AGL (ft): 2.94

Setting Depth (ft): _____

WL Meas Point Desc: top 4" = 0.57' blw surf casing

Drop Pipe Diam (in): _____

Const Depth [ft, BMP]: 25

Notes: _____

Locked? Y ✓ N _____ 3246

Water Quality

Well Condition: good

Sample Time: _____

Casing Purge

Field Filtered? Y _____ N _____

3x Casing Volume (gal): _____

Samples Filtered: _____

Flow Rate (gpm): _____

Equip Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:20	17.29							slt

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thomson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NAC

Northing: 469839

Weather: cold, foggy

Easting: 4836789

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 1.90' above conc

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N ____ Fortress

Sample Time: ____

Well Condition: good - conc pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:40	191.83							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 310 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NAG

Northing: 4836380

Weather: cold, foggy

Easting: 469927

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.8

Drop Pipe Diam (in): ____

WL Meas Point Desc: top coupler = 0.18' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N ____ 3246

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:34	31.95							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 800 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835714

Weather: cold, foggy

Easting: 470996

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.77

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4" = 2.41' AGS = 0.38' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 700

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:56	619.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: cold, foggy 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835627

Weather:

Easting: 471431

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Pump Description

Surface Casing Diam (in): NA

Permanent: ____ Temporary: ____

Well Casing Diam (in): 6

Type: ____ HP: ____

Surface Casing Height AGL (ft): 3.4'

Setting Depth (ft): ____

WL Meas Point Desc: Top well cap = 3.38' AGS

Drop Pipe Diam (in): ____

Const Depth [ft, BMP]: 550'

Notes: ____

Locked? Y ✓ N ____ 1163

Water Quality

Well Condition: good

Sample Time: ____

Casing Purge

Field Filtered? Y ____ N ____

3x Casing Volume (gal): ____

Samples Filtered: ____

Flow Rate (gpm): ____

Equip Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:08	56.51							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835644

Weather: cold, foggy

Easting: 471460

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Pump Description

Surface Casing Diam (in): 12

Permanent: ____ Temporary: ____

Well Casing Diam (in): 4

Type: ____ HP: ____

Surface Casing Height AGL (ft): 3.5

Setting Depth (ft): ____

WL Meas Point Desc: top sampler = 3.68' AGS = 0.17' above well cap

Drop Pipe Diam (in): ____

Notes: ____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:26	55.18							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10 Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14 Photos (#,Name): N

SPF Sounder #: SPF 300 ENG **GPS Coord. (UTM 11N, NAD83)**

Sounder Correction: None Northing: 471409

Weather: cold, foggy Easting: 4835899

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): Square 6" x 6"

Well Casing Diam (in): 1" ID

Surface Casing Height AGL (ft): 1.90'

WL Meas Point Desc: top 1" = 0.41' blw top surf casing

Const Depth [ft, BMP]: 500

Locked? Y ✓ N ____ Fortress

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:33	45.33							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835286

Weather: cold, foggy

Easting: 471532

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): ____

WL Meas Point Desc: top coupler = 0.19' blw casing

Notes: ____

Const Depth [ft, BMP]: 118

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:57	89.27							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: 483 5229

Weather: cold, foggy

Easting: 471504

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.9

Drop Pipe Diam (in): _____

WL Meas Point Desc: top rim/bar = 0.22' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:02	95.23							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-4-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835250

Weather: cold, foggy

Easting: 471497

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3,3

Drop Pipe Diam (in): _____

WL Meas Point Desc: hole in casing = 0.22' blw top plate

Notes: _____

Const Depth [ft, BMP]: 203

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:06	89.19							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835556

Weather: cold, clear

Easting: 471360

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Pump Description

Surface Casing Diam (in): 8

Permanent: ____ Temporary: ____

Well Casing Diam (in): 2

Type: ____ HP: ____

Surface Casing Height AGL (ft): 2.41

Setting Depth (ft): ____

WL Meas Point Desc: top 2" = 0.34' blw surf casing

Drop Pipe Diam (in): ____

Const Depth [ft, BMP]: 915

Notes: ____

Locked? Y ✓ N ____ 3400

Water Quality

Well Condition: good

Sample Time: ____

Casing Purge

Field Filtered? Y ____ N ____

3x Casing Volume (gal): ____

Samples Filtered: ____

Flow Rate (gpm): ____

Equip Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:13	781.0							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835591

Weather: cold, clear

Easting: 470562

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): ____

WL Meas Point Desc: top surf casing

Notes: ____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N ____ 0502

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:20	227.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 470636

Weather: cold, clear

Easting: 4835060

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): Square 6"x6"

Type: ____ HP: ____

Well Casing Diam (in): 1.25 ID

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 1.25" = 0.06' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N ____ Fortress

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:28	67.40							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835898

Weather: cool, clear

Easting: 470406

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): —

Type: ____ HP: ____

Well Casing Diam (in): 6

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 0.85

Drop Pipe Diam (in): ____

WL Meas Point Desc: top coupler = 0.19' above 6"

Notes: ____

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N ____ 3690

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:36	156.04							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: 4834079

Weather: Cool, clear

Easting: 470397

Wat Lev Transducer Download? Y ✓ N

Pump Description

Well Description

Permanent: Temporary:

Surface Casing Diam (in): 6

Type: HP:

Well Casing Diam (in): 4

Setting Depth (ft):

Surface Casing Height AGL (ft): 2.2

Drop Pipe Diam (in):

WL Meas Point Desc: Top 4" = 2.04' AGS

Notes:

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N 1163

Sample Time:

Well Condition: good

Field Filtered? Y N

Casing Purge

Samples Filtered:

3x Casing Volume (gal):

Equip Blank Collected? Y N

Flow Rate (gpm):

Transfer Blank Collected? Y N

Required Purge Time (min):

Duplicate Set Collected? Y N

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:57	164.45							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835105

Weather: cool, clear

Easting: 469094

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.92

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler = 0.21' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 323

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:10	279.95							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 483 5103

Weather: cool, clear

Easting: 469034

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Pump Description

Surface Casing Diam (in): 8

Permanent: _____ Temporary: _____

Well Casing Diam (in): 4

Type: _____ HP: _____

Surface Casing Height AGL (ft): 2.8

Setting Depth (ft): _____

WL Meas Point Desc: top 4" = 2.2' AGS

Drop Pipe Diam (in): _____

Const Depth [ft, BMP]: 305

Notes: _____

Locked? Y ✓ N _____ 3246

Water Quality

Well Condition: conc pad cracked

Sample Time: _____

Casing Purge

Field Filtered? Y _____ N _____

3x Casing Volume (gal): _____

Samples Filtered: _____

Flow Rate (gpm): _____

Equip Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:17	273.09							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-16-14

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835616

Weather: Cool, Clear

Easting: 468339

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" = 2.13' AGS

Notes: ____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:24	140.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 12-16-14

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: Cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4933564

Easting: 466562

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y _____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:35	107.87							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770 (MWS-11)
Page No.: 1 of 1
Personnel: J Thompson
Date: 12-16-14
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: none
Northing: 4834509
Weather: cool, clear
Easting: 467928
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ____ Temporary: ____
Surface Casing Diam (in): 8
Type: ____ HP: ____
Well Casing Diam (in): 4
Setting Depth (ft): ____
Surface Casing Height AGL (ft): 2.75 above conc
Drop Pipe Diam (in): ____
WL Meas Point Desc: top 4" = 0.79' blw surf casing
Notes: ____
Const Depth [ft, BMP]: 405
Water Quality
Locked? Y ✓ N ____ 3246
Sample Time: ____
Well Condition: conc pad cracked
Field Filtered? Y ____ N ____
Casing Purge
Samples Filtered: ____
3x Casing Volume (gal): ____
Equip Blank Collected? Y ____ N ____
Flow Rate (gpm): ____
Transfer Blank Collected? Y ____ N ____
Required Purge Time (min): ____
Duplicate Set Collected? Y ____ N ____
Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:00	140.69							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 12-16-14

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468001

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25

WL Meas Point Desc: top 2" = 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____ 1163

Well Condition: conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:11	57.46							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 17-2

SPF Sounder #: NA

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: —

Northing: —

Weather: Foggy

Easting: —

Wat Lev Transducer Download? Y ____ N ____ NA

Pump Description

Well Description

Permanent: X Temporary: ____

Surface Casing Diam (in): known

Type: ____ HP: ____

Well Casing Diam (in): known

Setting Depth (ft): ____

Surface Casing Height AGL (ft): known

Drop Pipe Diam (in): ____

WL Meas Point Desc: known

Notes: Flowing

Const Depth [ft, BMP]: known

Water Quality

Locked? Y ____ N K

Sample Time: ____ NA

Well Condition: no change

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): NA, since artesian flow assuming steady state.

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): 14/11.45 (15.85) = 1.4 gpm

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): —

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:50	Flowing	1.4	/	/	/	/	/	clear, no odor.
								no field parameters.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14 Photos (#,Name): 17-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description unknown source

Spring Sampling Point Description measured flow discharging into stock tank, which was nearly full.

Spring Flow Rate (gpm) 0.26 gpm (Volume: 0.25 L Time: 15.5 s)

$\left(\frac{0.25}{15.5}\right)(15.85) = 0.26$

Water Quality

Sample Time: —

Field Filtered? Y / N

Samples Filtered: —

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature: ERT

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:30	0.26	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14 Photos (#,Name): 2-2

Weather: Foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Government Corral Spring Source.

Spring Sampling Point Description Discharge from pipe feeding uppermost stock tank.

Spring Flow Rate (gpm) 0.63 gpm (Volume: 1L Time: 25.15)

(1L/25.15)(15.85) = 0.63

Water Quality

Sample Time: NA

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____ NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	0.63	—	—	—	—	—	—	clear, no odor.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 16-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Grassy spring source

Spring Sampling Point Description measured drip flow from broken HDPE line just up gradient from stock tank.

Spring Flow Rate (gpm) 0.02 gpm (Volume: 0.040 L Time: 32 s)

$\left(\frac{0.04\ L}{32\ s}\right)(15.85) = 0.02\ gpm$

Water Quality

Sample Time: —

Field Filtered? Y ____ N ____

Samples Filtered: —

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:10	0.02	—	—	—	—	—	—	drip flow.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 12/10/14
Photos (#,Name): 3-2
Weather: Foggy and cold.

GPS Coord. (UTM 11N, NAD83)

Northing: —
Easting: —

Spring Source Description Lowe spring source

Spring Sampling Point Description The HDPE line was broken flush to the cutbank. No water appeared to be flowing.

Spring Flow Rate (gpm) Dry (Volume: — Time: —)

Water Quality

Sample Time: —
Field Filtered? Y ~~N~~
Samples Filtered: —

Equip Blank Set Collected? Y ~~N~~
Transfer Blank Set Collected? ~~Y~~ N
Duplicate Set Collected? ~~Y~~ N

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:05	Dry	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 5-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Poison Spring source.

Spring Sampling Point Description Measured flow from crack in 2'x2' concrete well. Couldn't capture all water in cup during measurement, as it was running down side of well (as usual), so partial visual estimate for flow.

Spring Flow Rate (gpm) ~1 gpm (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:50	~1 gpm	—	—	—	—	—	—	Q → visual est.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14 Photos (#,Name): 1-3

Weather: Foggy, cold

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Sagebrush Spring

Spring Sampling Point Description New sample location from Q3-2014. Pipe feeding large diameter tractor tire was dry.

Spring Flow Rate (gpm) Dry (Volume:_____ Time:_____)

Water Quality

Sample Time: NA

Field Filtered? Y ___ N ___

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N NA

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:20	Dry	—	—	—	—	—	—	new tank from Q3-2014.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 11-2

Weather: Foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Sourdough Lower Spring source.

Spring Sampling Point Description Measured flow from pipe to concrete stock tank.

Spring Flow Rate (gpm) 0.03 gpm (Volume: 0.125L Time: 615)

$\left(\frac{0.125L}{615}\right)15.85 = 0.03$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E M. [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:50	0.03	—	—	—	—	—	—	low flow.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper
Page No.: 1 of 1
Personnel: Erik Boe
Date: 12/10/14
Photos (#,Name): 10-2
Weather: Foggy and cold.

GPS Coord. (UTM 11N, NAD83)

Northing: —
Easting: —

Spring Source Description Sourdough Upper spring source

Spring Sampling Point Description Measured discharge to stock tank.

Spring Flow Rate (gpm) 0.16 gpm (Volume: 250 mL Time: 25.2 s)

$\left(\frac{0.250\,L}{25.2\,s}\right)(15.85) = 0.16$ gpm

Water Quality

Sample Time: —
Field Filtered? Y / N
Samples Filtered: —

Equip Blank Set Collected? Y / N
Transfer Blank Set Collected? Y / N
Duplicate Set Collected? Y / N

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:35	0.16	—	—	—	—	—	—	clear, no odor

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 13-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs Source

Spring Sampling Point Description measured flow discharging from pipe into stock tank.

Spring Flow Rate (gpm) 3.3 gpm (Volume: 1L Time: 4.8s)

$\left(\frac{1L}{4.8s}\right) 15.85 = 3.3$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ___ N ___

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N ___

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:00	3.3	—	—	—	—	—	—	meas Q 3x

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 14-2

Weather: Foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Twin Springs source.

Spring Sampling Point Description Measured flow discharging into stock tank.

Spring Flow Rate (gpm) 3.0 gpm (Volume: 1L Time: 5.28s)

$\left(\frac{1L}{5.28s}\right)15.85 = 3.0$ gpm

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:15	3.0	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 12/10/14
Photos (#,Name): 15-2
Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —
Easting: —

Spring Source Description Whiskey Spring Source.

Spring Sampling Point Description Measured flow discharging into the stock tank (tractor tire).

Spring Flow Rate (gpm) 0.86 gpm (Volume: 1L Time: 18.45)

$\left(\frac{1L}{18.45}\right) 15.85 = 0.86$ gpm

Water Quality

Sample Time: —
Field Filtered? Y ~~/~~ N
Samples Filtered: ~~—~~

Equip Blank Set Collected? Y ~~/~~ N
Transfer Blank Set Collected? ~~Y~~ N
Duplicate Set Collected? ~~Y~~ N

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:45	0.86	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Bull Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14 Photos (#,Name): 12-2

Weather: foggy and cold.

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Bull Spring Source

Spring Sampling Point Description Measured flow from pipe discharging to stock tank.

Spring Flow Rate (gpm) 0.47 gpm (Volume: 0.250 L Time: 8.5 s)

$\left(\frac{0.25\ L}{8.5\ s}\right) 15.85 = 0.47$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y ~~N~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ ~~N~~ _____

Duplicate Set Collected? Y _____ ~~N~~ _____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:30	0.47	—	—	—	—	—	—	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Darky Rock

Personnel: Erik Boe

Date: 12/10/14

SPF Sounder #: ~~~

Sounder Correction: ~~~

Weather: Foggy and cold

Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1

Photos (#,Name): 9-2

GPS Coord. (UTM 11N, NAD83)

Northing: 4839673

Easting: 465168

Well Description

Surface Casing Diam (in): ____

Well Casing Diam (in): ____

Surface Casing Height AGL (ft): ____

WL Meas Point Desc: ____

Const Depth [ft, BMP]: ____

Locked? Y ____ N ____

Well Condition: Same

Pump Description

Permanent: ____ Temporary: flowing

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): (14/1.55)(15.85) = 10.6 gpm

Required Purge Time (min): ____

Sampler Signature: E.A.B.

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:50	flowing	10.6	/	/	/	/	/	Meas. @ 3X.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Boundary Spring
Page No.: 1 of 1
Personnel: Erik Bork
Date: 12/18/14
Photos (#,Name): 4-2
Weather: rain, overcast
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description unknown

Spring Sampling Point Description ~~Spring~~ measured flow discharging into the tractor tire stock tank.

Spring Flow Rate (gpm) 0.62 gpm (Volume: 1L Time: 25.4s)

$\left(\frac{1L}{25.4s}\right) 15.85 = 0.62$ gpm

Water Quality

Sample Time: _____
Field Filtered? Y ~~N~~
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ ~~N~~
Duplicate Set Collected? Y _____ ~~N~~

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:15	/	/	/	/	/	/	/	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Flowing Well

Personnel: Erik Boyt

Date: 12/10/14

SPF Sounder #: —

Sounder Correction: —

Weather: foggy and cold

Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1

Photos (#,Name): 8-2

GPS Coord. (UTM 11N, NAD83)

Northing: 4840435

Easting: 463722

Well Description

Surface Casing Diam (in): ____

Well Casing Diam (in): ____

Surface Casing Height AGL (ft): ____

WL Meas Point Desc: ____

Const Depth [ft, BMP]: ____

Locked? Y ____ N X

Well Condition: ____

Pump Description

Permanent: ____ Temporary: flowing

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): Q = 5.2 gpm

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:30	Flowing	1L/3.03s	~	~	~	~	~	Q = 5.2 gpm, measured 3X

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Reservoir Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/18/14 Photos (#,Name): 1-2

Weather: light rain and cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Unknown source.

Spring Sampling Point Description NA, no water visibly flowing. Tractor tire is full ~~wh~~ with sheet of ice on top.

Spring Flow Rate (gpm) NA (Volume: — Time: —)

Water Quality

Sample Time: —

Field Filtered? Y ___ N ___

Samples Filtered: —

Equip Blank Set Collected? Y ___ N ___

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: E M. [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:10	NA	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Canyon Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: ~~10/~~ 12/10/14 Photos (#,Name): 4-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Negro Rock Canyon Spring Source.

Spring Sampling Point Description Spring emanating from ground with relatively stagnant flow. Further down stream where Negro Rock Creek sample location was (waterfall), flow was between 5-10 gpm. (visual estimate)

Spring Flow Rate (gpm) Stagnate. (Volume: — Time: —)

Water Quality

Sample Time: —

Field Filtered? Y ~~N~~

Samples Filtered: —

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ ~~N~~

Duplicate Set Collected? ~~Y~~ ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:30	stagnant	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring
Page No.: 1 of 1
Personnel: Erik Rost
Date: 12/10/14
Photos (#,Name): 7-2
Weather: foggy and cold
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description Negro Rock spring source

Spring Sampling Point Description Tractor tire stock tank overflowing to channel that flows to the NW, low flow. Input to tank is below water level.

Spring Flow Rate (gpm) NA unable to measure. (Volume:_____ Time:_____)

Water Quality

Sample Time: _____
Field Filtered? Y ____ N ____
Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: Erik Rost

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:15	NA	✓	✓	✓	✓	✓	✓	unable to measure flow since input to tank is below tank WL.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxbow Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/18/14

Photos (#,Name): 2-2

Weather: rain, overcast

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Oxbow spring Source.

Spring Sampling Point Description Measured flow discharging into tractor tire stock tank.

Spring Flow Rate (gpm) 0.27 gpm (Volume: 0.250 L Time: 14.9 s)

$\left(\frac{0.25\ L}{14.9\ s}\right) 15.85 = 0.27$

Water Quality

Sample Time: —

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:20	0.27	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxyoke Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 12/18/14
Photos (#,Name): 3-2
Weather: rain, cloudy
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description unknown.

Spring Sampling Point Description few inches of water in tank, likely from recent (and current) rain. No flow into tank.

Spring Flow Rate (gpm) no flow (Volume: — Time: —)

Water Quality

Sample Time: —
Field Filtered? Y ___ N ___
Samples Filtered: —

Equip Blank Set Collected? Y ___ N ___
Transfer Blank Set Collected? Y ___ N ___
Duplicate Set Collected? Y ___ N ___

Sampler Signature: EMT

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:40	none	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Red Tank No. 3

Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14

Photos (#,Name): 18-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description unknown source

Spring Sampling Point Description unable to measure flow into tank since water level was above the input.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:10	NA	—	—	—	—	—	—	tank full

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: South Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 12/10/14 Photos (#,Name): 6-2

Weather: foggy and cold

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison spring source.

Spring Sampling Point Description Ponding water, no visual flow.

Spring Flow Rate (gpm) stagnant (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E M C

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:00	stagnant	—	—	—	—	—	—	

Q1 2015

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4838778

Weather: cool, clear

Easting: 470535

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6", lower 10" 6"

Type: _____ HP: _____

Well Casing Diam (in): _____

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3'

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler = 0.16' above cap

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:00	80.41							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4838740

Weather: warm, clear

Easting: 470557

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): ____

WL Meas Point Desc: top coupler = 0.20' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:39	82.15							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768 (MWS-10)
Personnel: J Thompson
Date: 2-25-15
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cool, clear
Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4837199
Easting: 471257

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.94
WL Meas Point Desc: top 4" = 0.57' blw surf casing
Const Depth [ft, BMP]: 25
Locked? Y ✓ N _____ 3246
Well Condition: good

Pump Description
Permanent: _____ Temporary: _____
Type: _____ HP: _____
Setting Depth (ft): _____
Drop Pipe Diam (in): _____
Notes: _____

Casing Purge
3x Casing Volume (gal): _____
Flow Rate (gpm): _____
Required Purge Time (min): _____

Water Quality
Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____
Equip Blank Collected? Y _____ N _____
Transfer Blank Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:33	16.31							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Northing: 469839

Sounder Correction: none

Easting: 4836789

Weather: cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90' above conc

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 2.65

Water Quality

Locked? Y ✓ N _____ fortress

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:47	191.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SIF 300 ENG

Sounder Correction: None

Weather: cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top coupler = 0.18' blw surf casing

Const Depth [ft, BMP]: 45

Locked? Y ✓ N _____ 3246

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836380

Easting: 469927

Pump Description

Permanent: _____ Temporary: _____

Type: / HP: _____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: _____

Water Quality

Sample Time: /

Field Filtered? Y / N _____

Samples Filtered: /

Equip Blank Collected? Y / N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:57	32.06							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SAF 800 ENG

Sounder Correction: none

Weather: cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 470996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4" = 0.38' blw surf casing

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____ 3246

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:11	619.93							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top well cap = 3.38' AGS

Const Depth [ft, BMP]: 550

Locked? Y ✓ N _____ 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 471431

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:22	56.43							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835644

Weather: cool, clear

Easting: 471460

Wat Lev Transducer Download? Y ✓ N

Pump Description

Well Description

Permanent: Temporary:

Surface Casing Diam (in): 12

Type: HP:

Well Casing Diam (in): 4

Setting Depth (ft):

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in):

WL Meas Point Desc: top coupler = 0.17' above well cap

Notes:

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N 1163

Sample Time:

Well Condition: good

Field Filtered? Y N

Casing Purge

Samples Filtered:

3x Casing Volume (gal):

Equip Blank Collected? Y N

Flow Rate (gpm):

Transfer Blank Collected? Y N

Required Purge Time (min):

Duplicate Set Collected? Y N

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:39	55.24							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SIF306 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: 4714609

Weather: Cool, clear

Easting: 4835899

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6" x 6"

Type: _____ HP: _____

Well Casing Diam (in): 1" ID

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1" = 0.41' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 500

Water Quality

Locked? Y ✓ N _____ Fitness

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:48	45.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 5976 1

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835286

Weather: cool, clear

Easting: 471532

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler = 0.19' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 118

Water Quality

Locked? Y ✓ N _____ 1163

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:55	89.96							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 310 ENG

Sounder Correction: None

Weather: Cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: Top coupler = 0.22' blw soft casing

Const Depth [ft, BMP]: 207

Locked? Y ✓ N _____ 3241

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835229

Easting: 471509

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:04	95.40							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SDF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835250

Weather: cool, clear

Easting: 471497

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.30

Drop Pipe Diam (in): _____

WL Meas Point Desc: hole in casing = 0.22' blw top plate

Notes: _____

Const Depth [ft, BMP]: 203

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:01	89.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835556

Weather: cool, clear

Easting: 471320

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2" = 0.34' b/w surf casing

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____ 3400

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:15	78.33							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cool clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: Top surf casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____ 0502

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:26	227.01							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 470636

Weather: cool, clear

Easting: 4835060

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6" x 6"

Type: _____ HP: _____

Well Casing Diam (in): 1.25 ID

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25" = 0.06' blw surf casing

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____ Fortress

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:33	68.23							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: Cool, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): ~

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler = 0.19' above TOC

Const Depth [ft, BMP]: 175

Locked? Y ✓ N _____ 3690

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4F35898

Easting: 470466

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:46	156.24							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF300 ENG

Sounder Correction: NONE

Weather: warm, clear

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.20

WL Meas Point Desc: top, 4" = 2.04' AGS

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____ 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 470397

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:04	164.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF300 ENG

Sounder Correction: None

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835165

Easting: 469094

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler = 0.21' below surf casing

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____ 3246

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:19	280.17							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764
Page No.: 1 of 1
Personnel: J Thompson
Date: 2-25-15
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: N/A
Northing: 4835103
Weather: warm, clear
Easting: 469034
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ____ Temporary: /
Surface Casing Diam (in): 8
Type: ____ HP: ____
Well Casing Diam (in): 4
Setting Depth (ft): ____
Surface Casing Height AGL (ft): 2.80
Drop Pipe Diam (in): ____
WL Meas Point Desc: top 4" = 2.20' AGS
Notes: ____
Const Depth [ft, BMP]: 305
Water Quality
Locked? Y ✓ N ____ 3246
Sample Time: ____
Well Condition: cover and cracked
Field Filtered? Y ____ N ____
Casing Purge
Samples Filtered: ____
3x Casing Volume (gal): ____
Equip Blank Collected? Y ____ N ____
Flow Rate (gpm): ____
Transfer Blank Collected? Y ____ N ____
Required Purge Time (min): ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:25	273.30							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: EW-6

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 310 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N _____ 1162

Well Condition: pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835816

Easting: 468339

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:35	140.96							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 2-25-15

SPF Sounder #: SPF 300 ENL

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw down top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y _____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 466562

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:47	107.85							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770 (MWS-11)

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SPF300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4834509

Weather: warm, clear

Easting: 467928

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75 above conc pad

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4" = 0.79' below surf casing

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____ 3246

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:04	140.76							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 2-25-15

Photos (#,Name): N

SPF Sounder #: SHF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4836785

Weather: warm, clear

Easting: 468001

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2" = 2.01' AGS

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____ 1163

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:18	57.67							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod - 1

Personnel: Erik Bue

Date: 3/18/15

SPF Sounder #: —

Sounder Correction: —

Weather: clear skies, light wind.

Wat Lev Transducer Download? Y _____ N X

Page No.: 1 of 1

Photos (#,Name): 5-2

GPS Coord. (UTM 11N, NAD83)

Northing: known

Easting: known

Well Description

Surface Casing Diam (in): known

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): _____

WL Meas Point Desc: _____

Const Depth [ft, BMP]: _____

Locked? Y _____ N X

Well Condition: no change

Pump Description

Permanent: _____ Temporary: known

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: 11:45

Field Filtered? Y _____ N N/A

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): ~~N/A~~ 1.31 gpm

Flow Rate (gpm): 1L/12.1 sec =

Required Purge Time (min): 0, steady State.

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:45	flowing	1L/12.1s	—	—	—	—	—	
		1.31 gpm						

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 6-2

Weather: clear skies, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Deposit Stock Tank Source.

Spring Sampling Point Description Measured flow from pipe discharge to large dia stock tank, which is full and overflowing.

Spring Flow Rate (gpm) 0.41 gpm (Volume: 1L Time: 38.7 sec)

Water Quality

Sample Time: 1

Field Filtered? Y ____ N ~~NA~~

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ~~NA~~

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ~~N~~ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:20	0.41	✓	✓	✓	✓	✓	✓	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Page No.: 1 of 1

Personnel: Erik Bae

Date: 3/18/15 Photos (#,Name): 2-2

Weather: clear skies, cool

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Government Corral Source

Spring Sampling Point Description Measured Sampled from discharge feed the upper mast stock tank.

Spring Flow Rate (gpm) 0.64 gpm (Volume: 1L Time: 24.6 sec)

Water Quality

Sample Time: 10:30

Field Filtered? Y ____ N NA

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: S.M.P.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:30	0.64	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: Erik Bow

Date: 3/18/15 Photos (#,Name): 7-2

Weather: clear skies, sunny, wind

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Grassy Spring source

Spring Sampling Point Description Measured water dripping from cracked HDPE line.

Spring Flow Rate (gpm) 0.03 gpm (Volume: 20 mL Time: 10 sec)

Water Quality

Sample Time: 12:55

Field Filtered? Y ~~N~~ NA

Samples Filtered: ~~N~~ NA

Equip Blank Set Collected? Y ~~N~~ NA

Transfer Blank Set Collected? Y ~~N~~ NA

Duplicate Set Collected? Y ~~N~~

Sampler Signature: E. Bow

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:55	0.03	~	~	~	~	~	~	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 3-2

Weather: clear skies, cool

GPS Coord. (UTM 11N, NAD83)

Northing: Known Easting: Known

Spring Source Description Lowe Spring source

Spring Sampling Point Description HDPE line is still broken, appears to be nominal drip flow into muddy puddle. *No measurement since no way to collect water.

Spring Flow Rate (gpm) *NA (Volume: / Time: /)

Water Quality

Sample Time: 10:50

Field Filtered? Y ___ N ___ NA

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N ___ NA

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	*NA	/	/	/	/	/	/	*unable to measure the flow rate (drip)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 4-2

Weather: clear skies, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: Known Easting: Known

Spring Source Description Poison Spring Source.

Spring Sampling Point Description No actual flow measurement, water flowing out crack in concrete well down the side. WL ~3.0" below top - north - side of concrete well. Seems bit lower than normal.

Spring Flow Rate (gpm) *1 gpm (Volume:_____ Time:_____)

*visual estimate.

Water Quality

Sample Time: 11:20

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____ NA

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20	*1 gpm	✓	✓	✓	✓	✓	✓	*visual estimate.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 1-2

Weather: clear skies, few clouds cool.

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Sagebrush Spring source.

Spring Sampling Point Description Water in tractor tire tank, but no flow.

Spring Flow Rate (gpm) Dry (Volume: NA Time: _____)

Water Quality

Sample Time: 10:00

Field Filtered? Y _____ N NA

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N NA

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: EMC

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:00	0							Dry

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 9-2

Weather: Sunny

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Lower Sourdough Spring Source.

Spring Sampling Point Description Measured flow from pipe feeding upper most concrete stock tank.

Spring Flow Rate (gpm) 0.04 gpm (Volume: 250 mL Time: 97sec)

1:37 = 97sec

Water Quality

Sample Time: 13:35

Field Filtered? Y ____ N ~~____~~

Samples Filtered: ~~____~~

Equip Blank Set Collected? Y ____ N ~~____~~ N/A

Transfer Blank Set Collected? Y ~~____~~ N ____

Duplicate Set Collected? Y ~~____~~ N ____

Sampler Signature: S.A.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:35	0.04	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 8-2

Weather: clear skies, sunny

GPS Coord. (UTM 11N, NAD83)

Northing: known Easting: known

Spring Source Description Upper Sourdough Spring Source.

Spring Sampling Point Description measured flow rate discharging from pipe into stock tank.

Spring Flow Rate (gpm) 0.34 gpm (Volume: 250 mL Time: 11.8 sec)

Water Quality

Sample Time: 13:20

Field Filtered? Y ____ N ____

Samples Filtered: ~~____~~

Equip Blank Set Collected? Y ____ N ~~____~~ NA

Transfer Blank Set Collected? Y ~~____~~ N ____

Duplicate Set Collected? Y ~~____~~ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:20	0.34	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 3/18/15 Photos (#,Name): 10-2

Weather: Sunny

GPS Coord. (UTM 11N, NAD83)

Northing: Known Easting: Known

Spring Source Description Twin Springs North source.

Spring Sampling Point Description Measured flow from discharge filling stock tank.

Spring Flow Rate (gpm) 2.99 gpm (Volume: 1L Time: 5.30 sec)

Water Quality

Sample Time: 14:05

Field Filtered? Y ____ N ~~N/A~~

Samples Filtered: ____

Equip Blank Set Collected? Y ____ ~~N~~ N/A

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Erik Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:05	2.99	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Erik Bark

Date: 3/18/15 Photos (#,Name): 11-2

Weather: overcast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: Known Easting: Known

Spring Source Description Twin Springs Source.

Spring Sampling Point Description measured flow from pipe feeding stock tank

Spring Flow Rate (gpm) 3.96 gpm (Volume: 1L Time: 4.00 sec)

Water Quality

Sample Time: 14:40

Field Filtered? Y ____ N NA

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N NA

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:40	3.96	~	~	~	~	~	~	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Erik Bor

Date: 3/18/15 Photos (#,Name): 12-1

Weather: Sunny, few clouds

GPS Coord. (UTM 11N, NAD83)

Northing: Known Easting: Known

Spring Source Description Whiskey Spring Source.

Spring Sampling Point Description measured the flow rate of water discharging from pipe to tractor tire stock tank.

Spring Flow Rate (gpm) 0.86 gpm (Volume: 1 L Time: 18.5 s)

$\left(\frac{1\,L}{18.5\,s}\right)\left(15.85\,\frac{gpm}{L/s}\right) = 0.86$

Water Quality

Sample Time: 15:30

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N N/A

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:30	0.86							

Q2 2015

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838778

Easting: 470535

Well Description

Surface Casing Diam (in): 6", lower 10"

Well Casing Diam (in): 6"

Surface Casing Height AGL (ft): 3'

WL Meas Point Desc: top (water = 0.16' above cap

Const Depth [ft, BMP]: 375

Locked? Y ____ N ✓ broken

Well Condition: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
7:45	80.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4838740

Weather: cool, cloudy

Easting: 470557

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Pump Description

Surface Casing Diam (in): 8

Permanent: ____ Temporary: ____

Well Casing Diam (in): 4

Type: ____ HP: ____

Surface Casing Height AGL (ft): 2.52

Setting Depth (ft): ____

WL Meas Point Desc: top coupler = 0.20' blw surf casing

Drop Pipe Diam (in): ____

Const Depth [ft, BMP]: 370

Notes: ____

Locked? Y ✓ N ____ 1163

Water Quality

Well Condition: good

Sample Time: ____

Casing Purge

Field Filtered? Y ____ N ____

3x Casing Volume (gal): ____

Samples Filtered: ____

Flow Rate (gpm): ____

Equip Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
7:56	82.04							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768 (MWS-10)
Personnel: J Thompson
Date: 5-6-15
SPF Sounder #: SPF 300 ENT
Sounder Correction: NAC
Weather: Cool, cloudy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4837199
Easting: 471257

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.94
WL Meas Point Desc: top 4" = 0.57' blw surf casing
Const Depth [ft, BMP]: 25
Locked? Y ✓ N ____ 3246
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:14	15.27							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 1.90' above conc

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Const Depth [ft, BMP]: 265

Locked? Y ✓ N ____ Fortress

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836789

Easting: 469839

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:30	191.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 5-6-15
SPF Sounder #: SPE 300 ENG
Sounder Correction: none
Weather: cool, cloudy
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4836380
Easting: 469927

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.80
WL Meas Point Desc: top coupler = 0.18' Hlw surf casing
Const Depth [ft, BMP]: 45
Locked? Y ✓ N ____ 3246
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:40	32.18							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 800 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 420996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4" = 0.38' blw steel casing

Const Depth [ft, BMP]: 700

Locked? Y ✓ N ____ 3246

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:57	619.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835627

Easting: 471431

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top well cap = 3.38' AGS

Const Depth [ft, BMP]: 550

Locked? Y ✓ N _____ 1143

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:09	56.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835644

Easting: 471460

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50

WL Meas Point Desc: top coupler = 0.17' above well cap

Const Depth [ft, BMP]: 156

Locked? Y ✓ N ____ 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:25	55.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835899

Easting: 471409

Well Description

Surface Casing Diam (in): 6" x 6"

Well Casing Diam (in): 1" ID

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 1" = 0.41' blw surf casing

Const Depth [ft, BMP]: 500

Locked? Y ✓ N ____ Fortress

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:34	45.31							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler = 6.19' blw surf casing

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____ 1163

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835286

Easting: 471532

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:53	89.45							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835229

Easting: 471504

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top cuplr = 0.22' blw surf casing

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____ 3246

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:56	95.37							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 471497

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.30

WL Meas Point Desc: hole in casing = 0.22' b/w top plate

Const Depth [ft, BMP]: 203

Locked? Y ____ N ✓ broken

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:00	89.38							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835556

Weather: warm, cloudy

Easting: 471320

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): ____

WL Meas Point Desc: Top 2" = 0.34' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N ____ 3400

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:08	78.45							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835591

Weather: warm, cloudy

Easting: 470562

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): ____

WL Meas Point Desc: top surf casing

Notes: ____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N ____ 0502

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:18	226.96							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: 4835060

Weather: warm, clear

Easting: 470636

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6" x 6"

Type: ____ HP: ____

Well Casing Diam (in): 1.25 ID

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 1.25" = 0.06' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N ____ Fortress

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:25	68.45							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler = 0.19' above TOC

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____ 3690

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835898

Easting: 470406

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:34	156.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4834079

Weather: warm, clear

Easting: 470397

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 4" = 2.04' AGS

Notes: ____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:57	164.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763
Page No.: 1 of 1
Personnel: J Thompson
Date: 5-6-15
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: none
Northing: 4835105
Weather: warm, clear
Easting: 469094
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ____ Temporary: ____
Surface Casing Diam (in): 10
Type: ____ HP: ____
Well Casing Diam (in): 6
Setting Depth (ft): ____
Surface Casing Height AGL (ft): 2.92
Drop Pipe Diam (in): ____
WL Meas Point Desc: top coupler = 0.21' blw surf casing
Notes: ____
Const Depth [ft, BMP]: 323
Water Quality
Locked? Y ✓ N ____ 3246
Sample Time: ____
Well Condition: good - conc pad cracked
Field Filtered? Y ____ N ____
Casing Purge
Samples Filtered: ____
3x Casing Volume (gal): ____
Equip Blank Collected? Y ____ N ____
Flow Rate (gpm): ____
Transfer Blank Collected? Y ____ N ____
Required Purge Time (min): ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:12	279.90							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 469034

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4" = 2.20' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____ 3246

Well Condition: conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:18	273.15							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 5-6-15

Photos (#,Name): N

SPF Sounder #: SPF 310 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4835416

Weather: warm, clear

Easting: 468339

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" = 2.13' AGS

Notes: ____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N ____ 1163

Sample Time: ____

Well Condition: pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:27	140.86							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw dum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 466562

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:40	107.83							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770 (MWS-11)
Page No.: 1 of 1
Personnel: J Thompson
Date: 5-6-15
Photos (#,Name): N
SPF Sounder #: SPF 300 ENG
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: none
Northing: 4834509
Weather: warm, clear
Easting: 467928
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ____ Temporary: ____
Surface Casing Diam (in): 8
Type: ____ HP: ____
Well Casing Diam (in): 4
Setting Depth (ft): ____
Surface Casing Height AGL (ft): 2.75' above conc pad
Drop Pipe Diam (in): ____
WL Meas Point Desc: top 4" = 0.79' blw surf casing
Notes: ____
Const Depth [ft, BMP]: 405
Water Quality
Locked? Y ✓ N ____ 3246
Sample Time: ____
Well Condition: good - conc pad cracked
Field Filtered? Y ____ N ____
Casing Purge
Samples Filtered: ____
3x Casing Volume (gal): ____
Equip Blank Collected? Y ____ N ____
Flow Rate (gpm): ____
Transfer Blank Collected? Y ____ N ____
Required Purge Time (min): ____
Duplicate Set Collected? Y ____ N ____
Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:58	140.82							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 5-6-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468001

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25

WL Meas Point Desc: top 2" = 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____ 1163

Well Condition: good - conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:12	57.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Prod-1

Personnel: Erik Boe

Date: 5/7/15

SPF Sounder #:

Sounder Correction:

Weather: overcast and windy

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in):

Well Casing Diam (in):

Surface Casing Height AGL (ft):

WL Meas Point Desc:

Const Depth [ft, BMP]:

Locked? Y ____ N ____

Well Condition: no change

Casing Purge

3x Casing Volume (gal):

Flow Rate (gpm): (1L/12.4s)(15.85) = 1.3 gpm

Required Purge Time (min):

Page No.: 1 of 1

Photos (#,Name): 7-2

GPS Coord. (UTM 11N, NAD83)

Northing:

Easting:

Pump Description

Permanent: ____ Temporary: flowing

Type: ____ HP: ____

Setting Depth (ft):

Drop Pipe Diam (in):

Notes:

Water Quality

Sample Time:

Field Filtered? Y ____ N ____

Samples Filtered:

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:20	flowing	1.3						

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/7/15 Photos (#,Name): 5-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description unknown

Spring Sampling Point Description measured flow from pipe discharging into tank.

Spring Flow Rate (gpm) 0.29 gpm (Volume: 1L Time: 55.6 s)

Water Quality

Sample Time: —

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:05	0.29	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/7/15 Photos (#,Name): 3-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government corral spring source.

Spring Sampling Point Description Measured flow discharging from pipe to uppermost stock tank.

Spring Flow Rate (gpm) 0.76 gpm (Volume: 1L Time: 20.95)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N ~~_____~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N ~~_____~~

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y ~~_____~~ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:15	0.76	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring ~~Source~~ Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/7/15

Photos (#,Name): 6-1

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Spring Source

Spring Sampling Point Description Flowrate is visual estimate. Drip flow moving up and down the length of HDPE line.

Spring Flow Rate (gpm) <0.01 (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:40	<0.01	—	—	—	—	—	—	typical mud puddle around the tank.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/7/15

Photos (#,Name): 2-2

Weather: overcast and windy.

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Lowe spring source.

Spring Sampling Point Description HDPE line broken flush to the cutbank. No visible flow, muddy.

Spring Flow Rate (gpm) Dry (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N /

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N /

Transfer Blank Set Collected? Y / N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
8:45	Dry	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15

Photos (#,Name): 3-2

Weather: overcast, windy, cold

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Poison Spring Source

Spring Sampling Point Description Est. flow from crack in 2'x2' concrete well. Couldn't capture all water during measurement, so this is estimate. WL was ~3.25" below north wall (concrete).

Spring Flow Rate (gpm) ~1. gpm (Volume: — Time: —)

Water Quality

Sample Time: —

Field Filtered? Y — N —

Samples Filtered: —

Equip Blank Set Collected? Y — N —

Transfer Blank Set Collected? Y — N —

Duplicate Set Collected? Y — N —

Sampler Signature: E.T.O.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:40	~1gpm	—	—	—	—	—	—	Q is visual est.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 5/7/15
Photos (#,Name): 1-2
Weather: cold and overcast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: —— Easting: ——

Spring Source Description Sagebrush Spring source.

Spring Sampling Point Description Dry, no flow. Tank dry as well.

Spring Flow Rate (gpm) Dry (Volume:_____ Time:_____)

Water Quality

Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
8:10	Dry	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower

Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15

Photos (#,Name): 8-3

Weather: Hazy / Sunny, windy

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Sourdough lower spring source

Spring Sampling Point Description Measured flow from pipe feeding concrete stock tank.

Spring Flow Rate (gpm) 0.04 gpm (Volume: 125mL Time: 51.95)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:15	0.04	/	/	/	/	/	/	low flow.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper
Page No.: 1 of 1
Personnel: Eric Boe
Date: 5/6/15
Photos (#,Name): 9-2
Weather: overcast, windy.
GPS Coord. (UTM 11N, NAD83)
Northing: —
Easting: —

Spring Source Description Sourdough upper spring source. ~~Feeding stock tank.~~

Spring Sampling Point Description Measured discharge from pipe Feeding stock tank.

Spring Flow Rate (gpm) 0.31 (Volume: 250 mL Time: 12.75)

Water Quality

Sample Time: _____
Field Filtered? Y ____ N ____
Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:35	0.31	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15 Photos (#,Name): 10-2

Weather: over cast, windy

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Twin Springs Source.

Spring Sampling Point Description Measured flow discharging from pipe into stock tank.

Spring Flow Rate (gpm) 2.8 (Volume: 5 gal Time: 106 sec)

$\left(\frac{5\ gal}{106\ sec}\right)(60) = 2.8\ gpm$

Water Quality

Sample Time: _____

Field Filtered? Y ___/___ N ___

Samples Filtered: ___/___

Equip Blank Set Collected? Y ___ N ___/___

Transfer Blank Set Collected? Y ___/___ N ___

Duplicate Set Collected? Y ___/___ N ___

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:35	2.8	✓	✓	✓	✓	✓	✓	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Spring South Page No.: 1 of 1

Personnel: Erik Bon

Date: 5/6/15 Photos (#,Name): 11-2

Weather: overcast windy

GPS Coord. (UTM 11N, NAD83)

Northing: —— Easting: ——

Spring Source Description Twin Spring Source

Spring Sampling Point Description meas. water discharging from pipe to tank.

Spring Flow Rate (gpm) 4.8 gpm (Volume: 5 gal Time: 63 sec)

Water Quality

Sample Time: ——

Field Filtered? Y ——/—— N ——

Samples Filtered: ——

Equip Blank Set Collected? Y —— N ——/——

Transfer Blank Set Collected? Y —— N ——/——

Duplicate Set Collected? Y —— N ——/——

Sampler Signature: E.M.C.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:00	4.8	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 5/6/15
Photos (#,Name): 12-2
Weather: cloudy and windy

GPS Coord. (UTM 11N, NAD83)

Northing: —
Easting: —

Spring Source Description Whiskey Spring Source.

Spring Sampling Point Description I measured the water flowing from pipe to tractor tire stock tank.

Spring Flow Rate (gpm) 0.66 (Volume: 1L Time: 24.10 s)

Water Quality

Sample Time: —
Field Filtered? Y ___ N ___
Samples Filtered: ___

Equip Blank Set Collected? Y ___ N ___
Transfer Blank Set Collected? Y ___ N ___
Duplicate Set Collected? Y ___ N ___

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:00	0.66	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Bull Spring

Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15

Photos (#,Name): 10-2

Weather: partly cloudy, windy.

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Bull Spring source.

Spring Sampling Point Description Measured flow from pipe discharging into the steel stock tank

Spring Flow Rate (gpm) 0.76 (Volume: 1 L Time: 20.80 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E. Boe

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:10	0.76	—	—	—	—	—	—	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Darky Rock

Personnel: Erik Boe

Date: 5/6/15

SPF Sounder #: /

Sounder Correction: /

Weather: Overcast/hazy, windy

Wat Lev Transducer Download? Y ____ N ____

Well Description

Surface Casing Diam (in): /

Well Casing Diam (in): /

Surface Casing Height AGL (ft): /

WL Meas Point Desc: /

Const Depth [ft, BMP]: /

Locked? Y ____ N ____

Well Condition: no change

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): 5gal/28.7s = 10.5 gpm

Required Purge Time (min): NA

Sampler Signature: E.T.

Page No.: 1 of 1

Photos (#,Name): 5-2

GPS Coord. (UTM 11N, NAD83)

Northing: 4839673

Easting: 465168

Pump Description

Permanent: ____ Temporary: Flowing W

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:10	Flowing	10.5	/	/	/	/	/	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Flowing Well

Personnel: Erik Boe

Date: 5/6/15

SPF Sounder #: —

Sounder Correction: —

Weather: Hazy / clearing, windy

Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1

Photos (#,Name): 6-2

GPS Coord. (UTM 11N, NAD83)

Northing: 4840435

Easting: 463722

Well Description

Surface Casing Diam (in): ____

Well Casing Diam (in): ____

Surface Casing Height AGL (ft): ____

WL Meas Point Desc: ____

Const Depth [ft, BMP]: ____

Locked? Y ____ N ____

Well Condition: no change

Pump Description

Permanent: ____ Temporary: Flowing

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: NA

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): —

Flow Rate (gpm): 5 gal / 58.0 sec = ~~1.4 gpm~~ 5.2 gpm

Required Purge Time (min): NA

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:30	Flowing	5.2	/	/	/	/	/	used 1" tubing on site
								to divert flow to
								5 gal bucket for
								measurement.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Boundry Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15 Photos (#,Name): 15-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: ____ Easting: ____

Spring Source Description unknown

Spring Sampling Point Description measured flow discharging into the tractor tire stock tank.

Spring Flow Rate (gpm) 1.4 gpm (Volume: 1L Time: 11.55)

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:00	1.4							

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 5/6/15
Photos (#,Name): 7-2
Weather: Hazy/sunny, windy
GPS Coord. (UTM 11N, NAD83)
Northing: ____ Easting: ____

Spring Source Description Negro Rock Spring source.

Spring Sampling Point Description No discharge flow into tractor tire tank is visible, below WL. Tank over flowing.

Spring Flow Rate (gpm) NA (Volume:____ Time:____)

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: E.M.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:50	NA	/	/	/	/	/	/	unable to measure flow.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Canyon Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15 Photos (#,Name): 2-4

Weather: cold, cloudy, windy

GPS Coord. (UTM 11N, NAD83)

Northing: / Easting: /

Spring Source Description Negro Rock Canyon Spring Source.

Spring Sampling Point Description Spring emanating from ground with near stagnant flow. Downstream at Negro Rock Creek sample location (sm. waterfall), flow was ~5-10 gpm (vis. est.)

Spring Flow Rate (gpm) stagnate (Volume: / Time: /)

Water Quality

Sample Time: /

Field Filtered? Y / N

Samples Filtered: /

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:30	stagnant	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxbow Spring

Page No.: 1 of 1

Personnel: Erik Bow

Date: 5/6/15

Photos (#,Name): 14-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Oxbow spring source.

Spring Sampling Point Description Measured flow discharging into tractor tire stock tank.

Spring Flow Rate (gpm) 0.27 gpm (Volume: 1 L Time: 59.25)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:25	0.27							

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxyoke Spring
Page No.: 1 of 1
Personnel: Erik Boe
Date: 5/6/15
Photos (#,Name): 13-2
Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: ~~—~~ Easting: ~~—~~

Spring Source Description Unknown

Spring Sampling Point Description < 1" water in tank, likely from recent rain. No spring flow into tank (DRY).

Spring Flow Rate (gpm) dry (Volume: ~~—~~ Time: ~~—~~)

Water Quality

Sample Time: _____
Field Filtered? Y ~~—~~ N _____
Samples Filtered: ~~—~~

Equip Blank Set Collected? Y _____ N ~~—~~
Transfer Blank Set Collected? Y ~~—~~ N _____
Duplicate Set Collected? Y ~~—~~ N _____

Sampler Signature: ~~—~~

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:15	Dry	~~—~~	~~—~~	~~—~~	~~—~~	~~—~~	~~—~~	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Red Tank No. 3 Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/7/15 Photos (#,Name): 4-2

Weather: overcast and windy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description unknown

Spring Sampling Point Description Input that feeds tank was below the tanks WL, so no measurement. Tank was full and overflowing.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:20	NA	/	/	/	/	/	/	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Reservoir Spring Page No.: 1 of 1

Personnel: Erik Boe

Date: 5/6/15 Photos (#,Name): 1-2

Weather: cloudy, cold, windy

GPS Coord. (UTM 11N, NAD83)

Northing: / Easting: /

Spring Source Description unknown source

Spring Sampling Point Description No measurement, water drizzling down side of discharge pipe.

Spring Flow Rate (gpm) NA (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: /

Equip Blank Set Collected? Y ____ N /

Transfer Blank Set Collected? Y / N ____

Duplicate Set Collected? Y / N ____

Sampler Signature: E.T.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
8:40	NA	/	/	/	/	/	/	tank full of water

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: South Poison Spring Page No.: 1 of 1

Personnel: Erik Bae

Date: 5/6/15 Photos (#,Name): 4-1

Weather: Overcast but clearing, windy

GPS Coord. (UTM 11N, NAD83)

Northing: ~~~~ Easting: ~~~~

Spring Source Description Poison spring source.

Spring Sampling Point Description Ponding water, very low stagnant flow.

Spring Flow Rate (gpm) Stagnant (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ~~~~

Transfer Blank Set Collected? Y ~~~~ N ____

Duplicate Set Collected? Y ~~~~ N ____

Sampler Signature: E.T.B.

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:50	stagnant	~~~~	~~~~	~~~~	~~~~	~~~~	~~~~	

Q3 2015

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838778

Easting: 470535

Well Description

Surface Casing Diam (in): 6", lower 10" 6"

Well Casing Diam (in): _____

Surface Casing Height AGL (ft): 3'

WL Meas Point Desc: top corner, 0.16' ab cap

Const Depth [ft, BMP]: 375

Locked? Y _____ N ✓ broken

Well Condition: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:32	80.35							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: NONE

Weather: clear, warm

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838740

Easting: 470557

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52'

WL Meas Point Desc: top coupler = 0.20' blw surf casing

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:22	82.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768
Personnel: J Thomson
Date: 9-23-15
SPF Sounder #: SPF300 ENG
Sounder Correction: none
Weather: clear, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4837199
Easting: 471257

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.94'
WL Meas Point Desc: top 4" = 0.57' blw surf casing
Const Depth [ft, BMP]: 25
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:07	17.25							sml

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836789

Easting: 469839

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 1.90' ab conc

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Const Depth [ft, BMP]: 265

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:52	191.82							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 9-23-15
SPF Sounder #: SPF300 ENG
Sounder Correction: None
Weather: clear, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4836380
Easting: 469927

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.80'
WL Meas Point Desc: top coupler = 0.18' blw surf casing
Const Depth [ft, BMP]: 45
Locked? Y ✓ N ____
Well Condition: Good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:58	32.41							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762
Personnel: J Thompson
Date: 9-23-15
SPF Sounder #: SIF 800 ENT
Sounder Correction: none
Weather: clear, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835714
Easting: 470996

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.77'
WL Meas Point Desc: top 4" = 0.38' blw surf casing
Const Depth [ft, BMP]: 700
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:23	619.93							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835127

Easting: 471431

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top well cap = 3.38' AGS

Const Depth [ft, BMP]: 550

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:28	56.08							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50'

WL Meas Point Desc: top coupler = 0.17' ab well cap

Const Depth [ft, BMP]: 156

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835644

Easting: 471460

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:34	55.11							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300 ENT

Sounder Correction: None

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6" x 6"

Well Casing Diam (in): 1"

Surface Casing Height AGL (ft): 1.90'

WL Meas Point Desc: top 1" = 0.41' blw surf casing

Const Depth [ft, BMP]: 500

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835899

Easting: 471409

Pump Description

Permanent: _____ Temporary: /

Type: _____ HP: _____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: /

Water Quality

Sample Time: /

Field Filtered? Y / N _____

Samples Filtered: /

Equip Blank Collected? Y / N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y / N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:54	45.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler = 0.19' blw surf casing

Const Depth [ft, BMP]: 118

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835286

Easting: 471532

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:03	89.64							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772
Personnel: J Thomson
Date: 9-23-15
SPF Sounder #: SPF 300 ENV
Sounder Correction: none
Weather: clear, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835229
Easting: 471504

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.90'
WL Meas Point Desc: top coupler = 0.22' blw surf casing
Const Depth [ft, BMP]: 207
Locked? Y ✓ N ____
Well Condition: good - conc pad cracked

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:07	95.59							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Personnel: J Thompson
Date: 9-23-15
SPF Sounder #: SPF 300 END
Sounder Correction: none
Weather: clear, warm
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835250
Easting: 471497

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.30'
WL Meas Point Desc: hole in casing = 0.22' blw top plate
Const Depth [ft, BMP]: 203
Locked? Y ____ N ✓ lock broken
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:14	89.58							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 EWG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835556

Easting: 471320

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.41'

WL Meas Point Desc: top 2" = 0.34' blw surf casing

Const Depth [ft, BMP]: 915

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:22	78.78							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top surf casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:02	227.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835060

Easting: 470636

Well Description

Surface Casing Diam (in): 6" x 6"

Well Casing Diam (in): 1.25"

Surface Casing Height AGL (ft): 2.00

WL Meas Point Desc: top 1.25" = 0.66' blw surf casing

Const Depth [ft, BMP]: 765

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:12	68.49							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300ENK

Sounder Correction: NAC

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85'

WL Meas Point Desc: top cover = 0.19' ab TOC

Const Depth [ft, BMP]: 175

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835898

Easting: 476406

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:55	155.97							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ✓ N

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 470397

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.20'

WL Meas Point Desc: top 4" = 2.04' AGS

Const Depth [ft, BMP]: 325

Locked? Y ✓ N

Well Condition: good

Pump Description

Permanent: Temporary:

Type: HP:

Setting Depth (ft):

Drop Pipe Diam (in):

Notes:

Water Quality

Sample Time:

Field Filtered? Y N

Samples Filtered:

Equip Blank Collected? Y N

Transfer Blank Collected? Y N

Duplicate Set Collected? Y N

Casing Purge

3x Casing Volume (gal):

Flow Rate (gpm):

Required Purge Time (min):

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:28	164.56							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENT

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835105

Easting: 469094

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.42'

WL Meas Point Desc: top coupler = 0.21' h/w surf casing

Const Depth [ft, BMP]: 323

Locked? Y ✓ N _____

Well Condition: good - conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:14	280.18							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300ENG

Sounder Correction: none

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 469634

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80'

WL Meas Point Desc: top 4" = 2.20' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____

Well Condition: good - conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:07	273.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835616

Easting: 468339

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73'

WL Meas Point Desc: top 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N _____

Well Condition: good - pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:01	141.00							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENL

Sounder Correction: NIL

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 466562

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y _____ N ✓

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:25	109.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF300

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834509

Easting: 467928

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.75' ab conc pad

WL Meas Point Desc: top 4" = 0.79' blw surf casing

Const Depth [ft, BMP]: 405

Locked? Y ✓ N _____

Well Condition: good - conc pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:50	140.86							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top 2" = 2.0' AGS

Const Depth [ft, BMP]: 42.5

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468001

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:13	57.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Pond-1

Personnel: J Thompson

Date: 9-23-15

SPF Sounder #: NA

Sounder Correction: NA

Weather: clear, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 10

Surface Casing Height AGL (ft): —

WL Meas Point Desc: —

Const Depth [ft, BMP]: 42.5

Locked? Y _____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): 2

GPS Coord. (UTM 11N, NAD83)

Northing: 4837684

Easting: 470904

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:16	flowing	0.74						Q measured from both pipes

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Lowe Spring

Spring Sampling Point Description broken HDPE line, little drip flow into muddy puddle - no way to measure

Spring Flow Rate (gpm) NM (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9130	—							NO MEASUREMENT

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Sagebrush spring

Spring Sampling Point Description Spring diverted into tractor fire tank, Flow from inflow pipe present, Upper fiberglass tank empty, lowest fire tank full of water, inflow pipe submerged

Spring Flow Rate (gpm) 1.4 (Volume: 1 Liter Time: 11.37sec)

Water Quality

Sample Time: —

Field Filtered? Y / N

Samples Filtered: —

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:52	1.4							flow from inflow pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Govt Corral Spring

Page No.: 1 of 1

Personnel: J Thompson S Rifle

Date: 9-23-15

Photos (#,Name): _____

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Govt Corral spring

Spring Sampling Point Description Measured Q at pipe inflow to upper trak. Flow present in 2 lower tanks also

Spring Flow Rate (gpm) 0.9 (Volume: 1L Time: 18.18 s)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N /

Samples Filtered: /

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y / N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:10	0.9							pipe inflow Q

16.88

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Personnel: J Thompson A. Ritter

Date: 9-23-15

Weather: clear, warm

Page No.: 1 of 1

Photos (#,Name): 3

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Spring Source.

Spring Sampling Point Description No actual flow measurement, water flowing from crack down the side of concrete well. WL in 2.0in. below top north side of concrete well.

Spring Flow Rate (gpm) *approx. 1gpm (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley M. Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:00	*1 gpm							*visual estimate

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Upper Sourdough Spring

Spring Sampling Point Description Spring piped to stock tank, Measured Q at inflow pipe.

Spring Flow Rate (gpm) 0.2 (Volume: 500 mL Time: 41.17 s)

Water Quality

Sample Time: —

Field Filtered? Y / N

Samples Filtered: —

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:54	0.2							Q from pipe inflow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough

Personnel: 9-23-15

Date: J Thompson A Ritter

Weather: clear, warm

Page No.: 1 of 1

Photos (#,Name): 3

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Lower Sourdough Spring

Spring Sampling Point Description Spring piped to cone stick tanks (2). Measured Q at pipe inflow to upper tank.

Spring Flow Rate (gpm) 0.02 (Volume: 250 mL Time: 3' 11.48") 191.48 sec.

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:21	0.02							Q at pipe inflow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Twin Springs North

Spring Sampling Point Description Spring piped to rec stock tank. Q measured from inflow pipe.

Spring Flow Rate (gpm) 1.1 (Volume: 1 L Time: 14.30")

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:40	1.1							flow from pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-23-15

Photos (#,Name): _____

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Twin Springs South

Spring Sampling Point Description Spring piped to rec stock tank. Q measured from inflow pipe.

Spring Flow Rate (gpm) 5.8 (Volume: 1L Time: 2.73")

Water Quality

Sample Time: _____

Field Filtered? Y ~~/~~ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y ~~/~~ N _____

Duplicate Set Collected? Y ~~/~~ N _____

Sampler Signature: J Thompson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:48	5.8							Q from pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring

Page No.: 1 of 1

Personnel: J Thompson & Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Whiskey Spring source

Spring Sampling Point Description Spring piped to tractor tire stock tank. Measured at pipe inflow.

Spring Flow Rate (gpm) 0.8 (Volume: 1L Time: 19.05")

Water Quality

Sample Time: —

Field Filtered? Y / N

Samples Filtered: —

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature:

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:16	0.8							@ from pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-22-15

Photos (#,Name): 2

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Spring Source

Spring Sampling Point Description No actual flow measurement, cracked HDPE pipe half water in it, no water flowing out

Spring Flow Rate (gpm) NM (Volume: N/A Time: N/A)

Water Quality

Sample Time: 14:32

Field Filtered? Y _____ N ~~_____~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N ~~_____~~

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley M. Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:32	——							no flow measurement

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank

Page No.: 1 of 1

Personnel: J Thompson A Ritter

Date: 9-23-15

Photos (#,Name): 3

Weather: clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: —

Easting: —

Spring Source Description Deposit Stock Tank Source

Spring Sampling Point Description Q used to be measured from pipe flowing into large diameter stock tank. Pipe gone on 9-23-15, water ponded where pipe used to be, no measurement

Spring Flow Rate (gpm) —

(Volume: N/A Time: N/A)

Water Quality

Sample Time: —

Field Filtered? Y / N

Samples Filtered: —

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature: J. Thompson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:44	—							No measurement

Q4 2015

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4
Personnel: J Thompson
Date: 12/16/15
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cold, windy, snowflurries
Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4838178
Easting: 470535

Well Description
Surface Casing Diam (in): 6", lower 10"
Well Casing Diam (in): 6"
Surface Casing Height AGL (ft): 3'
WL Meas Point Desc: top of 1" sounding tube copper
Const Depth [ft, BMP]: 375
Locked? Y ____ N X Broken
Well Condition: ____

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:53	80.33							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 12/10/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838140

Easting: 470557

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52'

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:59	81.99	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 597168
Personnel: J Thompson
Date: 12/16/15
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cold, windy, snow flurries
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4837199
Easting: 471257

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.94'
WL Meas Point Desc: top of 4" pipe = 0.57' blw surface casing
Const Depth [ft, BMP]: 25
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:11	17.44	–	–	–	–	–	–	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836789

Easting: 469839

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 1.90'

WL Meas Point Desc: top 2" pipe within surf casing

Const Depth [ft, BMP]: 205

Locked? Y ✓ N ____

Well Condition: good - conc. pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:20	191.85	-	-	-	-	-	-	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 597606

Page No.: 1 of 1

Personnel: J Thompson

Date: 12/16/15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4836380

Weather: cold, windy w/snow flurries

Easting: 469927

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.80'

Drop Pipe Diam (in): ____

WL Meas Point Desc: top of 1" sounding couplue

Notes: ____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N ____

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:25	32.47	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 800 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 470996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77'

WL Meas Point Desc: top of 4" pipe within surface casing

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:37	619.99	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF300 ENG1

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835027

Easting: 471431

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top of wellcap - 3.38' AGS

Const Depth [ft, BMP]: 550

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:47	55.85	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50'

WL Meas Point Desc: top of 1" sounding coupler

Const Depth [ft, BMP]: 154

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835044

Easting: 471460

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:54	55.09	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 12/10/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835899

Easting: 471409

Well Description

Surface Casing Diam (in): 6" x 6"

Well Casing Diam (in): 1"

Surface Casing Height AGL (ft): 1.90'

WL Meas Point Desc: top of 1" pipe within casing

Const Depth [ft, BMP]: 500

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:06	45.34	–	–	–	–	–	–	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59741

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835286

Easting: 471532

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00'

WL Meas Point Desc: top of 1" sounding tube coupler

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:12	89.75	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772
Personnel: J Thompson
Date: 12/10/15
SPF Sounder #: SPF300ENG
Sounder Correction: none
Weather: windy, cold, snow flurries
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4835229
Easting: 471504

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.90'
WL Meas Point Desc: top coupler = 0.22' blw surf casing
Const Depth [ft, BMP]: 207
Locked? Y ✓ N ____
Well Condition: good - conc pad cracked

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:15	95.04	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 5976D

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow-flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 471497

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.30'

WL Meas Point Desc: hole in casing = 0.22' below top of plate

Const Depth [ft, BMP]: 203

Locked? Y _____ N ✓ lock broken

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:20	89.07	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 12/16/15

Photos (#,Name): N

SPF Sounder #: SPF 300ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835556

Weather: cold, windy, flurries

Easting: 471320

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.41'

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" pipe = 0.34' blw surf. casing

Notes: ____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N ____

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:25	78.94	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: Cold, windy, snowflurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 470502

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40'

WL Meas Point Desc: top of surface casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:32	221.03	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12/16/15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: 4835010

Weather: cold, windy, snow flurries

Easting: 470636

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6"x6"

Type: _____ HP: _____

Well Casing Diam (in): 1.25"

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.00'

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 1.25" pipe = 0.00' blw surf. casing

Notes: _____

Const Depth [ft, BMP]: 705

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:37	608.82	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: Cold, windy, snow flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835898

Easting: 4704016

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85'

WL Meas Point Desc: top of 1" sounding coupler

Const Depth [ft, BMP]: 175

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:44	155.95	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2
Personnel: J Thompson
Date: 12/16/15
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cold, windy, snow flurries
Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

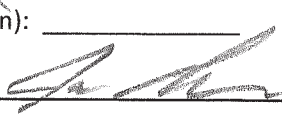
GPS Coord. (UTM 11N, NAD83)
Northing: 4834079
Easting: 470391

Well Description
Surface Casing Diam (in): 6
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.20'
WL Meas Point Desc: top of capon 4" pipe
Const Depth [ft, BMP]: 325
Locked? Y ✓ N ____
Well Condition: good

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: 

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:55	104.41	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 597103
Personnel: J Thompson
Date: 12/10/15
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cold, windy, snow flurries
Wat Lev Transducer Download? Y ____ N V

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)
Northing: 4835105
Easting: 469094

Well Description
Surface Casing Diam (in): 10
Well Casing Diam (in): 10
Surface Casing Height AGL (ft): 2.92'
WL Meas Point Desc: top of 1" sounding tube coupler
Const Depth [ft, BMP]: 323
Locked? Y V N ____
Well Condition: good - conc. pad cracked

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:09	880.01	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 597604

Page No.: 1 of 1

Personnel: J Thompson

Date: 12/14/15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835103

Weather: cold, windy, snow flurries

Easting: 4696034

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80'

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of 4" pipe in surf. casing

Notes: _____

Const Depth [ft, BMP]: 305

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc. pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:14	273.30	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6 Page No.: 1 of 1

Personnel: J Thompson

Date: 12/16/15

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

GPS Coord. (UTM 11N, NAD83)

Northing: 4835706

Easting: 408339

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y _____ N V

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73'

WL Meas Point Desc: top of 2" pipe in surf. casing

Const Depth [ft, BMP]: 340

Locked? Y V N _____

Well Condition: good - pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:20	140.98	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cold, windy, snow flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 460502

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53 - blw ref pt on top

WL Meas Point Desc: top 6" coupler

Const Depth [ft, BMP]: 482

Locked? Y _____ N ✓

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:28	108.09	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770
Personnel: J Thompson
Date: 12/10/15
SPF Sounder #: SPF300 ENG
Sounder Correction: none
Weather: cold, windy, snow flurries
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): N
GPS Coord. (UTM 11N, NAD83)
Northing: 4834509
Easting: 467928

Well Description
Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.75' above conc. pad
WL Meas Point Desc: top of 4" pipe in surf. casing
Const Depth [ft, BMP]: 405
Locked? Y ✓ N ____
Well Condition: good - conc. pad cracked

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge
3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:37	140.84	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 12/16/15

SPF Sounder #: SPF 300 ENG1

Sounder Correction: none

Weather: cold, windy, snow-flurries

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 4608001

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25'

WL Meas Point Desc: top of 2" pipe = 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N _____

Well Condition: good - conc. pad cracked

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:45	57.71	—	—	—	—	—	—	SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Darky Rock
Personnel: Ashley Ritter
Date: 12/15/15
SPF Sounder #: /
Sounder Correction: /
Weather: Sunny, mid 30's
Wat Lev Transducer Download? Y ____ N ____

Well Description Artesian Well
Surface Casing Diam (in): /
Well Casing Diam (in): /
Surface Casing Height AGL (ft): /
WL Meas Point Desc: /
Const Depth [ft, BMP]: /
Locked? Y ____ N ____
Well Condition: No change

Casing Purge
3x Casing Volume (gal): /
Flow Rate (gpm): 5gal/27.19s = 11gpm
Required Purge Time (min): N/A

Sampler Signature: Ashley Ritter

Page No.: 1 of 1

Photos (#,Name): 2

GPS Coord. (UTM 11N, NAD83)
Northing: 4839073
Easting: 405168

Pump Description
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:59	flowing	11gpm	~	~	~	~	~	

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Flowing Well
Personnel: Ashley Ritter
Date: 12/15/15
SPF Sounder #: —
Sounder Correction: —
Weather: Sunny, Mid 30's
Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1

Photos (#,Name): 3

GPS Coord. (UTM 11N, NAD83)
Northing: 4840435
Easting: 463722

Pump Description flowing
Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Well Description
Surface Casing Diam (in): ____
Well Casing Diam (in): ____
Surface Casing Height AGL (ft): ____
WL Meas Point Desc: ____
Const Depth [ft, BMP]: ____
Locked? Y ____ N ____
Well Condition: added tractor tire stock tank

Water Quality
Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Casing Purge 400mL each
3x Casing Volume (gal): ____
Flow Rate (gpm): (3.6gpm) 1.75 sec
Required Purge Time (min): 1.76 sec

Sampler Signature: Ashley R

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:10	flowing	3.6	—	—	—	—	—	Added tractor tire stock tank
								Spring discharge at top of WL of tank

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PROD-7

Personnel: Ashley Ritter

Date: 12/10/15

SPF Sounder #: —

Sounder Correction: —

Weather: windy, cold, w/snow flurries

Wat Lev Transducer Download? Y ____ N X

Page No.: 1 of 1

Photos (#,Name): 1

GPS Coord. (UTM 11N, NAD83)

Northing: 4837684

Easting: 470904

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 10

Surface Casing Height AGL (ft): —

WL Meas Point Desc: —

Const Depth [ft, BMP]: 425

Locked? Y ____ N X

Well Condition: good

Pump Description

Permanent: ____ Temporary: flowing

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): $\frac{1.5L}{5.58s}(15.85) = 1.4$ gpm

Required Purge Time (min): ____

Sampler Signature: Ashley R

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:00	flowing	1.4	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Unamed Spring North of Lowe Reservoir Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12-15-15 Photos (#,Name): 2

Weather: Sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4841110 Easting: 471328

Spring Source Description unknown source.

Spring Sampling Point Description No flow, stock tank full, sheet of ice, frozen over

Spring Flow Rate (gpm) N/A (Volume:_____ Time:_____)

Water Quality

Sample Time: _____

Field Filtered? Y_____ N_____

Samples Filtered: _____

Equip Blank Set Collected? Y_____ N_____

Transfer Blank Set Collected? Y_____ N_____

Duplicate Set Collected? Y_____ N_____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:32	NA	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Red Tank #3 Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15 Photos (#,Name): 2

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4838475 Easting: 471526

Spring Source Description unknown

Spring Sampling Point Description Tank full, overflowing, fill point below H2O surface, not completely frozen

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: —

Field Filtered? Y ____ N ____

Samples Filtered: —

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Ashley R

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:49	N/A	—	—	—	—	—	—	unable to get flow measurement due to fill point below H2O surface

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15

Photos (#,Name): 2

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4839576

Easting: 467764

Spring Source Description Poison Spring source

Spring Sampling Point Description flowing down (wall of) cement crack, water level measured from NW side, 1.5 inch of H2O down, to bottom

Spring Flow Rate (gpm) 1.4 gpm (Volume: 400ml approx Time: 4.47sec.)

$\frac{.4\,L}{4.47s}(15.85) \approx 1.4$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y / N

Samples Filtered: _____

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:09	1.4gpm	–	–	–	–	–	–	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Canyon Spring Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15 Photos (#,Name): 2

Weather: sunny; mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4842227 Easting: 4606324

Spring Source Description Negro Rock Canyon Spring Source

Spring Sampling Point Description stagnant H2O present, no obvious flow

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:25	N/A	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring
Page No.: 1 of 1
Personnel: Ashley Ritter
Date: 12/15/15
Photos (#,Name): 1
Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4382162 Easting: 4606059

Spring Source Description Negro Rock Spring Source

Spring Sampling Point Description Tank full + overflowing, fill point is below WL.

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: _____
Field Filtered? Y ____ N ____
Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____
Transfer Blank Set Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:49								

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: South Poison Spring

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15

Photos (#,Name): 1

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4839296 Easting: 467935

Spring Source Description Poison Spring Source

Spring Sampling Point Description ponding water, no visual flow

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:27	N/A	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Tank E. of Negro Rock Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15 Photos (#,Name): 3

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: — Easting: —

Spring Source Description Tank East of Negro Rock Spring Source

Spring Sampling Point Description Stock tank, flow from pipe in corner of tank, tank full, WL below overflow pipe

Spring Flow Rate (gpm) 3.6gpm (Volume: 500ml Time: 2.27 sec = 3.6 gpm
2.14 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley R

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:34	3.6gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Oxyoke Spring

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15

Photos (#,Name): 2

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4829499

Easting: 472172

Spring Source Description Oxyoke Spring Source

Spring Sampling Point Description No flow, 6" of H_2O in Bottom of tank probably from Rain

Spring Flow Rate (gpm) —

(Volume: — Time: —)

Water Quality

Sample Time: ~~_____~~

Field Filtered? ~~Y ____ N ____~~

Samples Filtered: ~~_____~~

Equip Blank Set Collected? ~~Y ____ N ____~~

Transfer Blank Set Collected? ~~Y ____ N ____~~

Duplicate Set Collected? ~~Y ____ N ____~~

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:17	N/A	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: OXBOW Spring

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/25

Photos (#,Name): 2

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4830328 Easting: 472172

Spring Source Description OXBOW Spring Source

Spring Sampling Point Description Measured from discharge into tractor tire stock tank, tank is full, overflowing

Spring Flow Rate (gpm) 0.3 gpm (Volume: 500ml. Time: 26.26 sec)

$\frac{15}{26.26}\left(\frac{15}{85}\right) = 0.3\text{gpm}$

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Rt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:26	0.3gpm	—	—	—	—	—	—	/

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: East Boundary
Page No.: 1 of 1
Personnel: Ashley Ritter
Date: 12/15/15
Photos (#,Name): 2
Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4833040 Easting: 477450

Spring Source Description unknown

Spring Sampling Point Description Tractor tire stock tank is full flowing through overflow pipe, measured flow discharging into stock tank

Spring Flow Rate (gpm) 0.8gpm (Volume: 500ml Time: 10.10 sec

$\frac{.5}{10.10}(15.85) = .78\text{gpm} \approx 0.8\text{gpm}$

Water Quality

Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley R

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:54	0.8gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/15/15

Photos (#,Name): 2

Weather: sunny, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4829321 Easting: 469195

Spring Source Description Whiskey Spring Source

Spring Sampling Point Description Tractor tire stock tank full, pipe inflow to stock tank

Spring Flow Rate (gpm) 1 gpm (Volume: 500ml Time: 8.10 sec

$\frac{.5}{8.10}(15.85) \simeq 1$ gpm

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:32	1gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/16/15

Photos (#,Name): 2

Weather: cold, windy w/ snow flurries, mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4840176

Easting: 471661

Spring Source Description Lowe Spring Source

Spring Sampling Point Description HDPE pipe Broken, no flow from pipe

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: ~~_____~~

Field Filtered? ~~Y ____ N ____~~

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:49	DRY	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/10/15 Photos (#,Name): 4

Weather: cold, windy w/snow flurries mid-30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4838049 Easting: 472953

Spring Source Description Government Corral Spring Source

Spring Sampling Point Description Dishchange from pipe into uppermost stock tank, which has another pipe feeding into a lower stocktank

Spring Flow Rate (gpm) 0.9gpm (upper tank) (Volume: upper tank 500ml Time: 8.76sec) 8.84sec

(lower tank 500ml = 8.50sec) ≈ 0.93gpm = lower tank

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:05	0.9gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: SageBrush Spring
Page No.: 1 of 1
Personnel: Ashley Ritter
Date: 12/10/25
Photos (#,Name): 2
Weather: cold, windy w/snow flurries mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4839227 Easting: 474047

Spring Source Description SageBrush Spring Source

Spring Sampling Point Description Tank full, pipe feeding tractor tire stock tank, stock tank

Spring Flow Rate (gpm) 1.64 gpm (Volume: 400mL (approx) Time: 4.22 sec)

$\left(\frac{4}{3.873}(15.85) = 1.64 \text{gpm}\right)$ 3.75 sec 3.65 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:32	1.64gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower

Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/16/15

Photos (#,Name): 2

Weather: cold, windy w/snow flurries mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4833077

Easting: 464709

Spring Source Description Lower Sourdough Spring Source

Spring Sampling Point Description Stock tank full, but frozen over, frozen into pipe, no apparent flow (no way to take flow measurement) N concrete

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: ~~_____~~

Field Filtered? ~~Y ____ N ____~~

Samples Filtered: ~~_____~~

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:14	N/A	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/11/15 Photos (#,Name): 2

Weather: cold, windy w/ snow flurries mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4833121 Easting: 463632

Spring Source Description Sourdough upper spring source

Spring Sampling Point Description Pipe discharge into stock tank

Spring Flow Rate (gpm) 0.34 gpm (Volume: 500ml Time: 23.84 sec 22.41 sec

$\left(\frac{.5}{23.125}\right)(15.85) = .34\text{gpm}$

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:23	0.34gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/16/15 Photos (#,Name): 2

Weather: cold, windy w/snow flurries mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4829624 Easting: 460218

Spring Source Description Twin Springs North Spring Source

Spring Sampling Point Description Pipe discharging into stock tank, stock tank is full

Spring Flow Rate (gpm) 2gpm (Volume: 500ml Time: 4.06 sec)

$\frac{.5}{3.995}(15.85) = 1.98 \approx 2$ gpm 3.93 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:35	2gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South
Page No.: 1 of 1
Personnel: Ashley Ritter
Date: 12/11/01 JS
Photos (#,Name): 1
Weather: cold, windy w/ snow flurries mid 30's

GPS Coord. (UTM 11N, NAD83)

Northing: 4829253 Easting: 460389

Spring Source Description Twin Springs South Spring Source

Spring Sampling Point Description Pipe discharge into stock tank, tank full

Spring Flow Rate (gpm) 4.9 gpm (Volume: 500ml Time: 1.45 sec 1.18 sec

$\frac{.500}{1.615}(15.85) = 4.9$ gpm

Water Quality

Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:46	4.9 gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Bull Spring Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/11/15 Photos (#,Name): 2

Weather: cold, windy w/ snow flurries

GPS Coord. (UTM 11N, NAD83)

Northing: 4831334 Easting: 464249

Spring Source Description Bull Spring Source

Spring Sampling Point Description PRO discharging into stock tank, tank is filling but not full

Spring Flow Rate (gpm) 0.9 gpm (Volume: 500ml Time: 8.80sec

$\frac{.5}{8.80}$ (15.85) = 0.9 gpm

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:07	0.9 gpm	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/16/15 Photos (#,Name): 1

Weather: cold, windy w/snow flurries

GPS Coord. (UTM 11N, NAD83)

Northing: 4834095 Easting: 470444

Spring Source Description Grassy Spring Source

Spring Sampling Point Description Drip from Broken HPPE to low to measure flow, Tank empty

Spring Flow Rate (gpm) N/A (Volume: — Time: —)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:43	N/A	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Ashley Ritter

Date: 12/16/18 Photos (#,Name): 1

Weather: cold, windy, w/snow flurries

GPS Coord. (UTM 11N, NAD83)

Northing: 4836114 Easting: 410717

Spring Source Description Deposit Stock Tank Spring Source

Spring Sampling Point Description Stock tank dry, no flow, puddle forming beside stock tank

Spring Flow Rate (gpm) N/A (Volume: ___ Time: ___)

Water Quality

Sample Time: ___

Field Filtered? Y ___ N ___

Samples Filtered: ___

Equip Blank Set Collected? Y ___ N ___

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: Ashley Ritter

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:55	N/A	—	—	—	—	—	—	

Q3 2016

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: Cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838778

Easting: 470535

Well Description

Surface Casing Diam (in): 6, lower 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3

WL Meas Point Desc: top coupler, 0.16' above cap

Const Depth [ft, BMP]: 375

Locked? Y ____ N ✓ lock broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Pump Description

Permanent: / Temporary: /

Type: / HP: /

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: /

Water Quality

Sample Time: /

Field Filtered? Y / N /

Samples Filtered: /

Equip Blank Collected? Y / N /

Transfer Blank Collected? Y / N /

Duplicate Set Collected? Y / N /

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:26	79.99							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: Cloudy, warm

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4838740

Easting: 470557

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top coupler = 0.20' blw surf casing

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:36	81.98							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4837199

Weather: cloudy, warm

Easting: 471257

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.44

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 4" = 0.57' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 25

Water Quality

Locked? Y ✓ N ____

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:54	17.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: 4836789

Weather: cloudy, warm

Easting: 469839

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" = 0.03' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N ____

Sample Time: ____

Well Condition: good - conc pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:17	191.59							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 9-29-16
SPF Sounder #: SPF 300 ENV
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.80
WL Meas Point Desc: top coupler = 0.18' blw surf casing
Const Depth [ft, BMP]: 45
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836380
Easting: 469927

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:08	32.77							

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 800 ENG

Sounder Correction: None

Weather: Cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835714

Easting: 470996

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4" = 0.38' blw surf casing

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:35	620.15							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835627

Weather: cloudy, warm

Easting: 471431

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): NA

Type: ____ HP: ____

Well Casing Diam (in): 6

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): ____

WL Meas Point Desc: top well cap = 3.38' AGS

Notes: ____

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y ____ N ✓ broken

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:46	56.32							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ✓ N ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835644

Easting: 471460

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50

WL Meas Point Desc: top coupler = 0.47' ab well cap

Const Depth [ft, BMP]: 156

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:52	55.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300ENG

Sounder Correction: None

Weather: Cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835899

Easting: 471409

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 1" = 0.41' blw surf casing

Const Depth [ft, BMP]: 500

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Pump Description

Permanent: ____ Temporary: /

Type: ____ HP: ____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: /

Water Quality

Sample Time: /

Field Filtered? Y ____ N ____

Samples Filtered: /

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:11	45.52							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF300 ENV

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler = 0.19' blw surf casing

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): /

Flow Rate (gpm): /

Required Purge Time (min): /

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835281

Easting: 471532

Pump Description

Permanent: ____ Temporary: /

Type: / HP: ____

Setting Depth (ft): /

Drop Pipe Diam (in): /

Notes: /

Water Quality

Sample Time: /

Field Filtered? Y / N ____

Samples Filtered: /

Equip Blank Collected? Y / N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:19	90.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835229

Easting: 471504

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top coupler = 0.22' blw surf casing

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: 

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:27	96.04							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835250

Easting: 471497

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.30

WL Meas Point Desc: hole in casing = 0.22' blw top plate

Const Depth [ft, BMP]: 203

Locked? Y ____ N ✓ lock broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: 

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:24	90.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thomyson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: 4835556

Weather: cloudy, warm

Easting: 471320

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): ____

WL Meas Point Desc: top 2" = 0.34' blw surf casing

Notes: ____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N ____

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:35	79.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

GPS Coord. (UTM 11N, NAD83)

Northing: 4835591

Easting: 470562

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top surf casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:44	227.01							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPE 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835060

Easting: 470636

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1.25

Surface Casing Height AGL (ft): 2.00

WL Meas Point Desc: top 1.25" = 0.06' below surf casing

Const Depth [ft, BMP]: 765

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:51	64.88							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835898

Easting: 470406

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler = 0.19' above TOC

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: /

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:03	155.71							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: NIL

Weather: cloudy, warm

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.20

WL Meas Point Desc: top 4" = 2.04' AGS

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834079

Easting: 470397

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:18	164.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835105

Easting: 469694

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler = 0.21' blw surf casing

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:38	280.16							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4" = 2.20' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4835103

Easting: 469034

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:45	273.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-29-16

Photos (#,Name): N

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

GPS Coord. (UTM 11N, NAD83)

Northing: 4835616

Easting: 468339

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2" = 2.13' AGS

Const Depth [ft, BMP]: 340

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:52	141.23							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4833564

Easting: 466562

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:03	109.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Personnel: J Thompson

Date: 5-24-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4834509

Easting: 467928

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.75

WL Meas Point Desc: top 4" = 0.79' h/w sort collar

Const Depth [ft, BMP]: 405

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:19	141.04							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 9-29-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25

WL Meas Point Desc: top 2" = 2.0' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): N

GPS Coord. (UTM 11N, NAD83)

Northing: 4836785

Easting: 468001

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:34	57.90							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-29-16 Photos (#,Name): #1

Weather: Clear, warm

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Broken black line w/ little drip flow into muddy puddle - no way to measure

Spring Sampling Point Description _____

Spring Flow Rate (gpm) NM (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:45	—	—	—	—	—	—	—	No measurement

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Govt. Corral Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-28-16 Photos (#,Name): #2 & 3

Weather: Sunny, clear

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Govt. Corral Spring

Spring Sampling Point Description Measured Q at pipe inflow for upper tank. Flow is present from upper to lower tank, and at lower tank *1 L container would not fit under pipe, 500 mL measuring cup used instead.

Spring Flow Rate (gpm) 1.17 (Volume: 500 mL Time: 6.93 sec)
500 mL 6.70 sec
500 mL 6.74 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20	1.17	—	—	—	—	—	—	Upper inflow pipe
11:22								〃 〃
11:26								〃 〃

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-28-16 Photos (#,Name): #4, 5, & 6

Weather: Sunny, breezy, clear

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush spring, located in fenced area

Spring Sampling Point Description Springs diverted into tractor tire tank, Q from inflow pipe at center of tire tank. Upper fiberglass tank is empty, lower tire tank full with inflow pipe submerged. Couldn't use HL bottle, 500 mL measuring cup used instead. *Used waders to access.

Spring Flow Rate (gpm) 1.66 (Volume: 500 mL Time: 4.81 sec)

500 mL 4.77 sec

500 mL 4.73 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:04	1.66	—	—	—	—	—	—	Q measured at inflow
12:08								
12:10								

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Well No: Prod-1 Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-28-16 Photos (#,Name): #7

Weather: Warm, slightly overcast

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description _____

Spring Sampling Point Description Measured w/ 500 mL measuring cup at top of tee where water is flowing. Black hose off of bottom tee but no water flowing out.

Spring Flow Rate (gpm) 0.88 (Volume: 500 mL Time: 9.07 sec)
500 mL 8.97 sec
500 mL 8.93 sec

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:46	0.88	—	—	—	—	—	—	Q from top w/flow
13:49								
13:51								

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-29-16 Photos (#,Name): # 8

Weather: Sunny, slightly overcast

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Spring

Spring Sampling Point Description Q point is black, broken, pipe above holding tank. Only a few drips coming out, not enough to measure.

Spring Flow Rate (gpm) — (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:15	—	—	—	—	—	—	—	No flow measurement

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-29-16 Photos (#,Name): #9 & 10

Weather: Sunny & slightly overcast

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank

Spring Sampling Point Description Tank to south is dry. Northern tank has some water ponded in bottom. Q taken from pipe on south side of northern tank.

Spring Flow Rate (gpm) 0.18 (Volume: 500 mL Time: 44.37 secs)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:38	0.18	–	–	–	–	–	–	Flow is only a few drips

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 9-29-16 Photos (#,Name): #11

Weather: Sunny, Warm

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Spring
* Metal fence stake in marshy area marks where springs is contained.

Spring Sampling Point Description Flowing out of crack on North side of concrete box. Water level in box is 1½" below N side. Q measured at N side crack by placing measuring cup against box.

Spring Flow Rate (gpm) 1.93 (Volume: 250mL / 225mL Time: 2.26 sec / 1.70 sec) *Approx Q

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:19	1.93	–	–	–	–	–	–	Concrete box is weathered

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Page No.: 1 of 1

Personnel: Cameron Carlson & J Thompson

Date: 9-29-16 Photos (#,Name): #12 & 13

Weather: Sunny, warm

GPS Coord. (UTM 11N, NAD83)

Northing: 4837400 Easting: 468182

Spring Source Description UnKnown

*Use larger container to measure flow (1L or 1gal?)

Spring Sampling Point Description New stock tank placed near Negro Creek river bed. Welded steel tank surrounded by round concrete base from old stock tank.

Spring Flow Rate (gpm) 9.86 (Volume: 500 mL Time: 0.82 sec)
520 mL 1.00 sec
450 mL 0.56 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____
400 mL 0.72 sec

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:40	9.86	–	–	–	–	–	–	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Page No.: 1 of 1

Personnel: Cameron Carlson & J. Thompson

Date: 9-29-16 Photos (#,Name): #14 & 15

Weather: Sunny & slightly overcast

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough

Spring Sampling Point Description Q at inflow pipe near end of trough. Only slightly dripping water.

Spring Flow Rate (gpm) 0.02 (Volume: 95 mL / 100 mL Time: 1:19.54 / 1:50.39)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:58	0.02	—	—	—	—	—	—	Q at pipe inflow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Page No.: 1 of 1

Personnel: Cameron Carlson & S Thompson

Date: 9-29-16 Photos (#,Name): #16 & 17

Weather: Sunny, & slightly overcast

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough

Spring Sampling Point Description Q taken from inflow pipe above tank. Pipe is attached to wooden post.

Spring Flow Rate (gpm) 0.24 (Volume: 340 mL Time: 22.71 sec)
325 mL 21.79 sec
370 mL 25.02 sec

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:11	0.24	–	–	–	–	–	–	Q from inflow pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Cameron Carlson & J Thompson

Date: 9-29-16 Photos (#,Name): #18

Weather: _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North

Spring Sampling Point Description Q measured from pipe above stock tank.

Spring Flow Rate (gpm) 1.22 (Volume: 400 mL Time: 5.17 sec)
450 mL 5.90 sec
380 mL 4.88 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:34	1.22	–	–	–	–	–	–	Flow from pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Cameron Carlson & J Thompson

Date: 9-29-16 Photos (#,Name): #19 & 20

Weather: Sunny & slightly

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South

Spring Sampling Point Description Q measured from inflow pipe to stock tank. Inflow pipe attached to wooden post. Springs is varying discharge "gurgling"

Spring Flow Rate (gpm) 4.55 (Volume: 540 mL Time: 1.87 sec)
440 mL 1.69 sec
450 mL 1.44 sec

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:45	4.55	–	–	–	–	–	–	Q from pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Cameron Carlson & S Thompson

Date: 9-29-16 Photos (#,Name): #21 & 22

Weather: Sunny, warm, & clear

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Spring

Spring Sampling Point Description Springs piped to tractor tire tank. Q measured at pipe inflow.

Spring Flow Rate (gpm) 0.98 (Volume: 330 mL Time: 5.34 sec)
320 mL 5.17 sec
400 mL 6.52 sec

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:10	0.98	–	–	–	–	–	–	Q from pipe

Q4 2016

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: clear & cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6, lower 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:57	80.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear & cold

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:07	82.19							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: clear + cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.94

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 25

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:24	17.18							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): /

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: /

Weather: clear + cold

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: / HP: ____

Well Casing Diam (in): 2

Setting Depth (ft): /

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): /

WL Meas Point Desc: top 2"

Notes: /

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good - cone pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:51	191.82							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear + cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:42	32.88							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 800 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear + cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.77

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4"

Notes: _____

Const Depth [ft, BMP]: 700

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:57	620.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): /

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: /

Weather: clear & cold

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): NA

Type: / HP: ____

Well Casing Diam (in): 6

Setting Depth (ft): /

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): /

WL Meas Point Desc: top well cap

Notes: /

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y ____ N ✓ broken

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:09	63.12							SWL; WL likely affected
								by pumping well for
								drill water

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): /

SPF Sounder #: SPF300ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: /

Weather: clear & cold

Easting: /

Wat Lev Transducer Download? Y ✓ N ____

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 12

Type: / HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): /

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): /

WL Meas Point Desc: top coupler

Notes: /

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: /

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:19	59.28							SWL; WL likely affected
								by pumping PW-1 for
								drill water

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: clear + cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6 x 6

Type: _____ HP: _____

Well Casing Diam (in): 1

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1"

Notes: _____

Const Depth [ft, BMP]: 500

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:28	45.64							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 5976 1

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: nine

Northing: _____

Weather: clear + cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 118

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:36	90.36							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear & cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:40	96.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: clear + cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.30

WL Meas Point Desc: hole in casing

Const Depth [ft, BMP]: 203

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:43	90.35							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENC

Sounder Correction: None

Weather: Clear & cold

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.41

WL Meas Point Desc: top 2"

Const Depth [ft, BMP]: 915

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:49	79.50							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: NONE

Weather: clear & cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top surf casing

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:11	227.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENL

Sounder Correction: none

Weather: clear & cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6 x 6

Well Casing Diam (in): 1.25

Surface Casing Height AGL (ft): 2.60

WL Meas Point Desc: top 1.25"

Const Depth [ft, BMP]: 765

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:18	65.15							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): /

SPF Sounder #: SPF 300 END

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: /

Weather: clear + cold

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): —

Type: / HP: ____

Well Casing Diam (in): 6

Setting Depth (ft): /

Surface Casing Height AGL (ft): 0.85

Drop Pipe Diam (in): /

WL Meas Point Desc: top coupler

Notes: /

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:26	156.05							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear & cold

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4"

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:54	164.61							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Page No.: 1 of 1

Personnel: J Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear + cold

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.92

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 323

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:14	280.63							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENL

Sounder Correction: none

Weather: clear + cold

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:19	273.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear + cold

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2"

Const Depth [ft, BMP]: 340

Locked? Y ✓ N ____

Well Condition: good- cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J. Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:27	141.48							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear & cold

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y _____ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:39	108.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Personnel: J Thompson

Date: 12-21-16

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: clear & cold

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.75

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 405

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:02	141.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J. Thompson

Date: 12-21-16

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: clear & cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): /

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): /

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): /

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:28	58.12							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 1 & 2

Weather: Sunny & clear, 10°F, slight breeze, ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description HDPE pipe broken. Frozen, no flow but ice around pipe. Photo #1 of broken pipe, photo #2 of dry (empty) stock tank.

Spring Sampling Point Description _____

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:16	N/A	–	–	–	–	–	–	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 3, 4, & 5

Weather: Sunny, Clear (~18°F), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Discharge from pipe into upper most stock tank, with an outlet into lower stock tank. Stock tanks are mostly frozen over.

Spring Sampling Point Description Flow measured w/ 500 mL measuring cup at upper most inlet pipe.

Spring Flow Rate (gpm) 0.85 (Volume: 500 mL Time: 9.26 s)

500 mL 9.38 s

500 mL 9.38s @ 10:54

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:46	0.85	–	–	–	–	–	–	Upper inflow pipe

Lower Stock Tank Q * See photo #5

500 mL / 10.08 s @ 11:03

500 mL / 10.16 s @ 11:04

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 6, 7, 8, & 9

Weather: Clear, Sunny (Low 20's) Snow on ground (~5")

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Spring. Upper fiberglass (white) tank is empty, no flow in or out. Upper tractor tire tank full & partially frozen over. Inlet & outlet pipes are submerged, and water is flowing over sides. Lower tractor tire tank frozen over.

Spring Sampling Point Description Cannot measure discharge of upper tractor tire tank because inlet & outlet pipes are submerged, see photo #7&8.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ___ N ___

Samples Filtered: _____

Equip Blank Set Collected? Y ___ N ___

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:24	N/A	–	–	–	–	–	–	Inlet pipe submerged

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 10, 11, & 12

Weather: Sunny, Clear (Mid 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No: Prod-1. No flowing water from upper or lower tee pipe. Black 2" HDPE pipe off lower tee into blue poly stock tank, upper tee valve closed. *Tee likely frozen.

Spring Sampling Point Description Well casing & discharge tee have been wrapped w/ insulation. Prod 1 is surrounded by pumping equipment & stock tanks.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y / N

Samples Filtered: /

Equip Blank Set Collected? Y / N

Transfer Blank Set Collected? Y / N

Duplicate Set Collected? Y / N

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:57	N/A	—	—	—	—	—	—	No flowing water

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 13 & 14

Weather: Clear, sunny (Mid 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank

Spring Sampling Point Description Tank to Southeast is dry & covered w/ snow. Northern tank is full & frozen over w/ ice. No access to inlet pipe because of ice, but a slight drip is present.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:26	N/A	–	–	–	–	–	–	Tank frozen over

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 15

Weather: Clear, Sunny (Mid 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs Source

Spring Sampling Point Description Broken black HDPE pipe, no flow. stock tank empty.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y / N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:51	N/A	–	–	–	–	–	–	No flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 16

Weather: Sunny & Clear (Mid 20's), slight breeze, ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Spring

Spring Sampling Point Description Flowing over E. & W. sides of concrete box. No way to channle flow & take measurement. Water is warm enough that it is not frozen over.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:34	N/A	–	–	–	–	–	–	Cannot measure

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 17

Weather: Clear, Sunny (Mid 20's), ~5" of snow on the ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown

Spring Sampling Point Description Discharge measured from pipe inlet to stock tank, which is covered by a large metal screen. Flow measured w/ 1 liter nalgene. Stock tank is not frozen.

Spring Flow Rate (gpm) 9.14 (Volume: 1 Liter Time: 1.65s @ 13:56
1 Liter 1.88s @ 13:57
1 Liter 1.69s @ 13:59

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:57	9.14	—	—	—	—	—	—	Healthy inlet flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 18

Weather: Sunny & clear (High 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Spring Source.
*Elevation benchmark put in place just above inlet pipe for stock tank, between large basalt rocks.

Spring Sampling Point Description Stock tank is full, but frozen over & covered in snow. No flow from inlet pipe, pipe is dry.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:24	–	–	–	–	–	–	–	No flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 19

Weather: Sunny & clear (High 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough

Spring Sampling Point Description Discharge taken from inflow pipe above tank using 500mL measuring cup. Inflow pipe is attached to wooden post. Stock tank is partially frozen over.

Spring Flow Rate (gpm) 0.42 (Volume: 500mL Time: 18.58s) @ 14:42
500mL 19.04s @ 14:43
500mL 19.65s @ 14:44

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:43	0.42	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 20

Weather: Sunny & clear (High 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North

Spring Sampling Point Description Flow taken from inlet pipe above stock tank using 1 liter Nalgene. Stock tank is not frozen.

Spring Flow Rate (gpm) 1.54 (Volume: 1000 mL Time: 10.22s) @ 15:23
1000 mL 10.15s @ 15:24
1000 mL 10.48s @ 15:25

Water Quality

Sample Time: _____

Field Filtered? Y ___/___ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:25	1.54	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 21

Weather: Sunny & clear (High 20's), ~5" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South

Spring Sampling Point Description Discharge measured from inflow pipe attached to wooden post & above stock tank. Measured with 1 liter Nalgene. Stock tank not frozen

Spring Flow Rate (gpm) 5.85 (Volume: 1000 mL Time: 2.79s) @15:38
1000 mL 2.75s @15:38
1000 mL 2.60s @15:39

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:38	5.85	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 12/21/16 Photos (#,Name): 22

Weather: Sunny w/ fog (Mid 20's), ~6" of snow on ground

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Spring

Spring Sampling Point Description Discharge measurement taken from inflow pipe above tractor tire tank, with 1 liter Nalgene. Tractor tire tank not frozen over.

Spring Flow Rate (gpm) 0.9 (Volume: 1000 mL Time: 18.00s) @16:12
1000 mL 17.34s @16:13
1000 mL 17.37s @16:15

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:14	0.9	–	–	–	–	–	–	Flowing, not frozen

Q1 2017

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6, lower 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:55	80.08							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:04	81.96							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768
Personnel: J Thompson
Date: 3-22-17
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.94
WL Meas Point Desc: top 4"
Const Depth [ft, BMP]: 25
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:25	13.86							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: NONE

Weather: cloudy & warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 2"

Const Depth [ft, BMP]: 265

Locked? Y ✓ N ____

Well Condition: good, conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:47	191.51							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: _____

Weather: cloudy & warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:37	32.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762
Personnel: J Thomson
Date: 3-22-17
SPF Sounder #: SPF 800 ENG
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.77
WL Meas Point Desc: top 4"
Const Depth [ft, BMP]: 700
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:39	620.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thomson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top well cap

Const Depth [ft, BMP]: 550

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:50	59.05							SWL, likely effected by pumping well for drill water

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: NONE

Weather: cloudy, warm

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 156

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:03	57.00							SWL, likely affected by pumping PW-1 for drill water

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top of

Const Depth [ft, BMP]: 500

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:13	45.30							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 118

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:21	90.31							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:25	96.22							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Personnel: J Thompson
Date: 3-22-17
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: cloudy, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.30
WL Meas Point Desc: hole in casing
Const Depth [ft, BMP]: 203
Locked? Y ____ N ✓ broken
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Sampler Signature: ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:29	90.22							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:36	78.68							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPE 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top of casing

Notes: _____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:46	226.73							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6x6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25"

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:52	54.13							SWL – higher than prev measurement, confirmed w/ 2nd measurement

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 175

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:01	155.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4"

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:23	164.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.92

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 323

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:43	280.05							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____

Well Condition: good - cap lid cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:48	273.27							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENL

Sounder Correction: 10kC

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2"

Const Depth [ft, BMP]: 340

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:58	141.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 3-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cloudy, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6"

Const Depth [ft, BMP]: 482

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:10	107.89							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 30W ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4"

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:27	140.89							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cloudy, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:42	57.61							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 1, 2, & 3

Weather: Mostly clear, low 50's, previously rained last night (muddy)

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description HDPE pipe broken. A trickle of water running down side of pipe but no way to measure. Stock tank 1/3 full of snow melt/rain water. Water seep next to stock tank.

Spring Sampling Point Description Photo #1 of broken HDPE pipe photo #2 of stock tank, photo #3 of seep near stock tank.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:06	N/A	–	–	–	–	–	–	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 4, 5, & 6

Weather: Clear/Sunny, low 50's

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Discharge from pipe into upper most stock tank, with an outlet into middle stock tank. Lower most stock tank 1/3 full

Spring Sampling Point Description Flow measured w/ 500 mL measuring cup at upper most inlet pipe.

Spring Flow Rate (gpm) 0.38 (Volume: 500 mL Time: 20.98s)
500 mL 20.54s
500 mL 20.37s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y / N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:36	0.38	—	—	—	—	—	—	Upper inlet pipe

Lower Stock Tank Q *See photo #6
500 mL / 21.89s @ 10:47
500 mL / 21.98s @ 10:48

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 7,8,9 & 10

Weather: Sunny / Clear, mid 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs. Upper fiberglass tank is cracked & empty. Upper tractor tire tank full & flowing over side. Lower tractor tire tank full, inlet/outlet pipes submerged, and water seeping over edge.

Spring Sampling Point Description Cannot measure discharge of upper tractor tire tank because inlet & outlet are submerged, see photos #8 & 9.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:09	N/A	–	–	–	~	–	–	Inlet pipe submerged.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 11, 12, & 13

Weather: Sunny & clear, high 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No: Prod-1, No flowing water from lower 2" HDPE pipe from well tee into series of blue stock tanks. Upper part of tee has valve open w/ discharge hose into large holding tank.

Spring Sampling Point Description Prod-1 is surrounded by pumping equipment for drilling operation. Generator & submersible pump were running upon arrival.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:49	N/A	–	–	–	–	–	–	No flowing water

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 14, 15, & 16

Weather: Sunny & clear, high 50's, 5 mph SE wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank Source.

*Difficulty measuring because inlet pipe almost submerged.

Spring Sampling Point Description Tank to Southeast is mostly dry (rain water collected along edge). Northern tank is full & overflowing. Discharge measured w/ 500mL measuring cup @ inlet pipe.

Spring Flow Rate (gpm) 0.58 (Volume: 500 mL Time: 13.06 s)

500 mL 14.28 s

500 mL 13.66 s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:13	0.58	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 17 & 18

Weather: Sunny & Clear, high 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs Source

Spring Sampling Point Description Broken HDPE pipe has water dripping from end, onto ground. Stock tank is empty. Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.04 (Volume: 200 mL Time: 71.32s)
200 mL 70.03s
200 mL 72.79s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:37	0.04	—	—	—	—	—	—	Dripping @ HDPE pipe.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 19 & 20

Weather: Sunny w/ clouds, high 50's, 5 mph SE wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Springs

Spring Sampling Point Description Flowing over E. & W. sides of concrete box. No way to channel flow & take measurement.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:10	N/A	–	–	–	–	–	–	Flowing out of box

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 21 & 22

Weather: Sunny w/ clouds, high 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown

Spring Sampling Point Description Discharge is measured from pipe inlet, which is covered by large metal screen. Discharge measured w/ 1 liter Nalgene container.

Spring Flow Rate (gpm) 9.19 (Volume: 1000 mL Time: 1.65 s)

1000 mL 1.71 s

1000 mL 1.82 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:28	9.19	~	~	~	~	~	~	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 23 & 24

Weather: Cloudy, mid 50's, light S-SW breeze.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs Source.

Spring Sampling Point Description Upper and lower stock tanks are full. Inlet pipe to upper stock tank has a drip of water coming out, but not enough to measure.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:55	N/A	—	—	—	—	—	—	Drip at inlet pipe.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 25 & 26

Weather: Sunny w/ clouds, high 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs Source.

*Area around stock tank has been filled in w/ sediments from runoff in gully.

Spring Sampling Point Description Discharge taken from inlet pipe above stock tank, attached to wood post. Discharge measured w/ 1 liter nalgene container.

Spring Flow Rate (gpm) 2.3 (Volume: 1000 mL Time: 6.96s)

1000 mL 6.97 s

1000 mL 6.72 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:12	2.3	-	-	-	-	-	-	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 27 & 28

Weather: Sunny w/ clouds, high 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North Source.

*Stock tank is vegetated w/ algae & plants growing inside.

Spring Sampling Point Description Discharge is taken from inlet pipe above stock tank w/ 1 liter nalgene container. Stock tank is 3/4 full.

Spring Flow Rate (gpm) 1.76 (Volume: 1000 mL Time: 9.06 s)

1000 mL 8.91 s

1000 mL 9.01 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:38	1.76	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 29

Weather: Sunny w/ clouds, low 60's, 5 mph SW wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South Source.

Spring Sampling Point Description Discharge measured from inlet pipe attached to wood post above stock tank. Measured w/ 1 liter nalgene container.

Spring Flow Rate (gpm) 12.97 (Volume: 1000 mL Time: 1.21 s)
1000 mL 1.27 s
1000 mL 1.19 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:52	12.97	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): 30

Weather: Cloudy, mid 50's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Springs Source.

Spring Sampling Point Description Discharge measurement taken from inlet pipe above tractor tire tank, with 1 liter nalgene container. Tank is full and overflowing.

Spring Flow Rate (gpm) 0.95 (Volume: 1000 mL Time: 16.58s)

1000 mL 16.72s

1000 mL 16.81s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:25	0.95	–	–	–	–	–	–	Flowing

Q2 2017

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6, lower 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:05	80.10							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name):

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing:

Weather: hot, clear

Easting:

Wat Lev Transducer Download? Y ✓ N

Pump Description

Well Description

Permanent: Temporary:

Surface Casing Diam (in): 8

Type: HP:

Well Casing Diam (in): 4

Setting Depth (ft):

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in):

WL Meas Point Desc: top coupler

Notes:

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N

Sample Time:

Well Condition: good

Field Filtered? Y N

Casing Purge

Samples Filtered:

3x Casing Volume (gal):

Equip Blank Collected? Y N

Flow Rate (gpm):

Transfer Blank Collected? Y N

Required Purge Time (min):

Duplicate Set Collected? Y N

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:16	82.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: hot, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.94

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 25

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:30	10.69							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name):

SPF Sounder #: SPF300ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing:

Weather: hot, clear

Easting:

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6

Type: ____ HP: ____

Well Casing Diam (in): 2

Setting Depth (ft):

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in):

WL Meas Point Desc: top 2"

Notes:

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N ____

Sample Time:

Well Condition: good, cone pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered:

3x Casing Volume (gal):

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm):

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min):

Duplicate Set Collected? Y ____ N ____

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:00	191.58							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:49	32.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): /

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: /

Weather: hot, clear

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: / HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): /

Surface Casing Height AGL (ft): 2.77

Drop Pipe Diam (in): /

WL Meas Point Desc: top 4"

Notes: /

Const Depth [ft, BMP]: 700

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:59	620.30							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 310 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top well cap

Notes: _____

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:05	57.24							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 12

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:20	56.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): /

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: /

Weather: hot, clear

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 6x6

Type: / HP: ____

Well Casing Diam (in): /

Setting Depth (ft): /

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): /

WL Meas Point Desc: top 1"

Notes: /

Const Depth [ft, BMP]: 500

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:28	45.33							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 5976/

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: hot, clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:35	88.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: hot, clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:39	94.17							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.30

Drop Pipe Diam (in): _____

WL Meas Point Desc: hole in casing

Notes: _____

Const Depth [ft, BMP]: 203

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:44	88.22							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:50	77.35							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top surf casing

Notes: _____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:09	226.98							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: hot, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1.25

Surface Casing Height AGL (ft): 2.00

WL Meas Point Desc: top 1.25"

Const Depth [ft, BMP]: 765

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:20	51.08							SWL – cont rise
								in WSEL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): /

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: /

Weather: hot, clear

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: /

Surface Casing Diam (in): —

Type: ____ HP: ____

Well Casing Diam (in): 6

Setting Depth (ft): /

Surface Casing Height AGL (ft): 0.85

Drop Pipe Diam (in): /

WL Meas Point Desc: top coupler

Notes: /

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:28	155.76							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name):

SPF Sounder #: SPF300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing:

Weather: hot, clear

Easting:

Wat Lev Transducer Download? Y ✓ N

Pump Description

Well Description

Permanent: Temporary:

Surface Casing Diam (in): 6

Type: HP:

Well Casing Diam (in): 4

Setting Depth (ft):

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in):

WL Meas Point Desc: top 4"

Notes:

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N

Sample Time:

Well Condition: good

Field Filtered? Y N

Casing Purge

Samples Filtered:

3x Casing Volume (gal):

Equip Blank Collected? Y N

Flow Rate (gpm):

Transfer Blank Collected? Y N

Required Purge Time (min):

Duplicate Set Collected? Y N

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:46	164.26							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 310 ENV

Sounder Correction: None

Weather: hot, clear

Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:00	280.21							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300ENL

Sounder Correction: none

Weather: hot, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4"

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:05	273.32							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Personnel: J Thompson

Date: 6-22-17

SPF Sounder #: SPF 300ENT

Sounder Correction: None

Weather: hot, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.73

WL Meas Point Desc: top 2"

Const Depth [ft, BMP]: 340

Locked? Y ✓ N _____

Well Condition: good - cover not cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:12	141.00							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name):

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing:

Weather: hot, clear

Easting:

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): NA

Type: ____ HP: ____

Well Casing Diam (in): 12

Setting Depth (ft): ____

Surface Casing Height AGL (ft): 0.53' blw drum top

Drop Pipe Diam (in): ____

WL Meas Point Desc: top of 4"

Notes: ____

Const Depth [ft, BMP]: 482

Water Quality

Locked? Y ____ N ✓

Sample Time: ____

Well Condition: good

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: ____

3x Casing Volume (gal): ____

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): ____

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature:

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:24	107.94							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): /

SPF Sounder #: SPF 300 BAR

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: /

Weather: hot, clear

Easting: /

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: ____ Temporary: ____

Surface Casing Diam (in): 8

Type: / HP: ____

Well Casing Diam (in): 4

Setting Depth (ft): /

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): /

WL Meas Point Desc: top 4"

Notes: /

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N ____

Sample Time: /

Well Condition: good - conc pad cracked

Field Filtered? Y ____ N ____

Casing Purge

Samples Filtered: /

3x Casing Volume (gal): /

Equip Blank Collected? Y ____ N ____

Flow Rate (gpm): /

Transfer Blank Collected? Y ____ N ____

Required Purge Time (min): /

Duplicate Set Collected? Y ____ N ____

Sampler Signature: /

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:42	140.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-22-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: hot, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:56	57.62							sat

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 90's, 5-10 mph N-NW wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. HDPE pipe stubbed out of hill side flowing into muddy puddle below.

Spring Sampling Point Description Discharge taken from HDPE pipe using 500 mL measuring cup. Stock tank empty and seep near stock tank is no longer present.

Spring Flow Rate (gpm) 0.41 (Volume: 500 mL Time: 19.24s)
500 mL 19.58s
500 mL 19.89s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:27	0.41	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 90's, 5-10 mph N-NW wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral Springs Source

*stock tanks are overgrown w/ algae

Spring Sampling Point Description Discharge from pipe into upper most stock tank with an outlet into middle stock tank. All stock tanks full. Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.56 (Volume: 500mL Time: 14.61s)

500mL 13.75s

500mL 13.90s

Water Quality

Sample Time: _____

Field Filtered? Y ~~N~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:44	0.56	—	—	—	—	—	—	Flowing

Lower Stock Tank Q

500mL / 17.55s @ 16:49

500mL / 17.26s @ 16:50

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 40's, 5-10mph NE wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs Source. Upper fiberglass tank is empty. * Tractor tire tanks are overgrown w/ algae.

Spring Sampling Point Description Upper & lower tractor tire tanks are full and overflowing. Inlet & outlet pipes for either tank are submerged. Cannot measure discharge.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
17:04	N/A	—	—	—	—	—	—	Tanks overflowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & Clear, mid 80's, 5mph NW wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No: Prod-1. No flowing water from upper or lower discharge tee. Upper discharge has valve open.

Spring Sampling Point Description Blue stock tanks have been removed. Mining equipment has been cleared off site. Cattle fence put around wellhead.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ____ N ____

Samples Filtered: _____

Equip Blank Set Collected? Y ____ N ____

Transfer Blank Set Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:06	N/A	—	—	—	—	—	—	No Flowing Water

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 80's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank Source.

*Fairly overgrown w/ vegetation & aquatic insects

Spring Sampling Point Description Southeast tank is dry. Northern tank is full but not above outlet pipe (no flow at outlet). Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.26 (Volume: 500 mL Time: 29.79 s)

500 mL 30.19 s

500 mL 31.32 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:52	0.26	←	—	—	←	—	—	Flowing @ Inlet Pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 80's, 5mph NW breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs Source

Spring Sampling Point Description Broken HDPE pipe w/ water dripping on the ground. Stock tank is empty. Discharge measured w/ 500 mL measuring cup

Spring Flow Rate (gpm) 0.04 (Volume: 200 mL Time: 80.22 s)

200 mL 80.81 s

200 mL 79.88 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:24	0.04	—	—	—	—	—	—	Dripping @ HDPE pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, mid 80's, 5mph NW breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Springs

*Grown over w/ algae.

Spring Sampling Point Description No water flowing over concrete box. Water is Approx. 1¼-1½ inches below rim of NW corner.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:23	N/A	—	—	—	—	—	—	Not Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & Clear, mid 80's, light N-NW breeze.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown

Spring Sampling Point Description Discharge is measured from pipe inlet, which is covered by a large metal screen. Discharge measured w/ 1 liter nalgene container

Spring Flow Rate (gpm) 5.14 (Volume: 1000 mL Time: 3.08 s)
1000 mL 3.09 s
1000 mL 3.09 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:39	5.14	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 3/22/17 Photos (#,Name): _____

Weather: Sunny & Clear, high 80's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs Source.

*Overgrown w/ algae

Spring Sampling Point Description Upper & Lower stock tanks are full. Slight flow coming out of inlet pipe. Flow measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.02 (Volume: 85 mL Time: 80.61s)

85 mL 80.88s

85mL 80.55s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:07	0.02	–	–	–	–	–	–	Slight flow @ Inlet pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, high 80's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs Source

*Overgrown w/ algae

Spring Sampling Point Description Stock tank full and over flowing. Discharge taken from inlet pipe attached to wood post. Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.99 (Volume: 500 mL Time: 8.11s)

500 mL 7.88s

500 mL 7.91s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:21	0.99	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, high 80's, 5mph NW breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North Source

*stock tank is overgrown w/ algae and aquatic plants

Spring Sampling Point Description stock tank is full and overflowing. Discharge taken from inlet pipe located above stock tank. Discharge measured w/ 1 liter nalgene container.

Spring Flow Rate (gpm) 1.72 (Volume: 1000 mL Time: 9.21 s)

1000 mL 9.20 s

1000 mL 9.24 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:44	1.72	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, high 80's, 5-10 mph NW wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South Source

*Overgrown w/ algae

Spring Sampling Point Description Stock tank is full. Discharge measured at inlet pipe attached to wood post. Discharge measured w/ 1 liter nalgene container.

Spring Flow Rate (gpm) 9.26 (Volume: 1000 mL Time: 1.71s)

1000 mL 1.65s

1000 mL 1.78s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:56	9.26	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs Page No.: 1 of 1

Personnel: Cameron Carlson

Date: 6/22/17 Photos (#,Name): _____

Weather: Sunny & clear, low 90's, light variable breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Springs Source

Spring Sampling Point Description Discharge measurement taken from inlet pipe above tractor tire tank, with 1 liter nalgene container. Stock tank is full.

Spring Flow Rate (gpm) 0.88 (Volume: 1000 mL Time: 17.93s)
1000 mL 17.98s
1000 mL 18.13s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:38	0.88	~	~	~	~	~	~	Flowing

Q3 2017

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm & clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6, lower 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): _____

WL Meas Point Desc: top cover, 3.16' AGS

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:18	80.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.32' AGS 45

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:25	82.05							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Warm, Clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.94

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.37' AGS

Notes: _____

Const Depth [ft, BMP]: 25

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:42	15.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 1.87' AGS

Notes: _____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____ AF

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:15	191.59							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.62' AGS

Notes: _____

Const Depth [ft, BMP]: 45

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:05	32.88							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762
Personnel: J Thompson
Date: 9-26-17
SPF Sounder #: SPF 800 ENV
Sounder Correction: none
Weather: warm, clear
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.77
WL Meas Point Desc: top 4", 2.40' AGS
Const Depth [ft, BMP]: 700
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:02	620.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top well cap, 3.38' AGS

Notes: _____

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:12	56.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: NIL

Weather: warm, clear

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.50

WL Meas Point Desc: top coupler, 3.68' AGS to

Const Depth [ft, BMP]: 156

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:27	55.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10
Personnel: J Thompson
Date: 9-26-17
SPF Sounder #: SPF 300 ENG
Sounder Correction: none
Weather: warm, clear
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6x6
Well Casing Diam (in): 1
Surface Casing Height AGL (ft): 1.90
WL Meas Point Desc: top 1", 1.49' AGS to
Const Depth [ft, BMP]: 500
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): /
Flow Rate (gpm): /
Required Purge Time (min): /

Page No.: 1 of 1
Photos (#,Name): ____
GPS Coord. (UTM 11N, NAD83)
Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:33	45.38							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler, 2.81' AGS +10

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:41	88.22							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.68' AGS 40

Notes: _____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:45	94.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Personnel: J Thompson
Date: 9-26-17
SPF Sounder #: SPE 300 END
Sounder Correction: none
Weather: warm, clear
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.30
WL Meas Point Desc: hole in casing, 3.10' AGS to
Const Depth [ft, BMP]: 203
Locked? Y ____ N ✓ broken
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:48	88.16							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.10' AGS TOC

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BHA) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:53	76.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top surf casing, 3.40' AGS TOC

Const Depth [ft, BMP]: 350

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:20	227.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 340 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6x6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 200

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25", 1.94' AGS AC

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: Good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:30	52.83							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 E/D6

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler, 1.04' AGS #0

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:39	155.77							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: warm, clear

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.20

WL Meas Point Desc: top 4", 2.04' AGS 90

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:54	164.43							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler, 2.71' @ 45°

Const Depth [ft, BMP]: 323

Locked? Y ✓ N _____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:14	280.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 9-26-17

SPF Sounder #: SPF300 ENG

Sounder Correction: none

Weather: warm, clear

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4", 2.20' AFS gt

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:19	273.52							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: windy, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.13' AGS ag

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:26	141.01							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 12

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 0.53' s/w drum top

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 6", 2.67' AGS

Notes: _____

Const Depth [ft, BMP]: 482

Water Quality

Locked? Y _____ N ✓

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:37	111.98							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 1.96' AGS 10

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:53	140.99							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: warm, clear

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2' AGS 40

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good-conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	(BMP) DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:08	57.66							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 20 & 21

Weather: Sunny & clear, mid 70's, stiff N. breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Broken HDPE pipe stubbed out of hillside flowing into muddy puddle below.

Spring Sampling Point Description Discharge taken from HDPE pipe using 500 mL measuring cup. Stock tank empty and seep near stock tank no longer present.

Spring Flow Rate (gpm) 0.41 (Volume: 500 mL Time: 18.86 s)

500 mL 19.89 s

500 mL 19.49 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:40	0.41	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 22, 23, & 24

Weather: Sunny & clear, high 70's, light N. breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral Springs Source

* Stock tanks overgrown w/ algae

Spring Sampling Point Description Discharge from pipe into upper most stock tank w/ an outlet into middle stock tank. All stock tanks full. Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 1.18 (Volume: 500 mL Time: 6.56s)

500 mL 6.80s

500 mL 6.72s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:12	1.18	–	–	–	–	–	–	Flowing

Lower Stock Tank Q

500 mL / 6.91s @ 16:16

500 mL / 6.82s @ 16:17

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 25, 27, & 28

Weather: Sunny & clear, mid 70's, light NW wind.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs Source.

*Fiberglass tank is empty

Spring Sampling Point Description Tractor tire tanks have been mostly cleared of algae/moss. Tanks are 90% full, outlet pipes are submerged, and inlet pipe almost submerged. Difficult to measure flow at inlet pipe. No measurement.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y ___ N ___

Samples Filtered: _____

Equip Blank Set Collected? Y ___ N ___

Transfer Blank Set Collected? Y ___ N ___

Duplicate Set Collected? Y ___ N ___

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
16:33	N/A	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 5

Weather: Sunny & Clear, Mid 70s, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No: Prod-1. No flowing water from upper or lower discharge tee. Upper discharge has valve open.

Spring Sampling Point Description Cattle fence around wellhead.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:06	N/A	–	–	–	–	–	–	No flowing water

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 3, 4, & 5

Weather: Sunny & clear, mid 70's, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank Source.

Spring Sampling Point Description South tank is dry. North tank is 1/4 full. Discharge measured w/ 500mL measuring cup at inlet pipe.

Spring Flow Rate (gpm) 0.20 (Volume: 500 mL Time: 39.26s)

500 mL 39.02s

500 mL 38.46s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:56	0.20	—	—	—	—	—	—	Flowing @ inlet pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 1 & 2

Weather: Sunny & slightly overcast, low 70's, no wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs Source.
*Sampled at end of pipe, but dripping along length of cracked pipe. Flow is not representative of total discharge

Spring Sampling Point Description Broken HDPE pipe w/ water dripping on the ground. Stock tank is empty. Discharge measured with 500 mL measuring cup.

Spring Flow Rate (gpm) 0.04 (Volume: 200 mL Time: 89.35 s)
200 mL 84.95 s
200 mL 87.11 s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y ____ N ____

Field Filtered? Y ____ N ____ Transfer Blank Set Collected? Y ____ N ____

Samples Filtered: _____ Duplicate Set Collected? Y ____ N ____

Sampler Signature: Cameron Caulson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:38	0.04	—	—	—	—	—	—	Dripping @ HDPE pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 7

Weather: Sunny & clear, mid 70's, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Springs

*Concrete box overgrown w/ algae.

Spring Sampling Point Description No flowing water over edges of box. Water flowing from crack on west side of concrete box. Flow estimated w/ 500 mL measuring cup. Difficult to measure.

Spring Flow Rate (gpm) ~3.4 (Volume: ~500 mL Time: ~2.32s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:26	~3.4	—	—	—	—	—	—	Flowing from crack

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 8 & 9

Weather: Sunny & clear, high 70s, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown.

Spring Sampling Point Description Discharge measured at inlet pipe covered with large metal screen. Discharge measured w/ 1-liter Nalgene container.

Spring Flow Rate (gpm) 6.39 (Volume: 1000 mL Time: 2.49)

1000 mL 2.58

1000 mL 2.38

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:44	6.39	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 10 & 11

Weather: Sunny & clear, mid 70s, light breeze.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs Source

Spring Sampling Point Description Upper & lower stock tanks are empty, slow drip of water from inlet pipe, not enough to measure.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: ~~_____~~

Field Filtered? ~~Y~~ _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N ~~_____~~

Transfer Blank Set Collected? Y _____ N ~~_____~~

Duplicate Set Collected? Y _____ N ~~_____~~

Sampler Signature: Cameron Cardson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:04	N/A	~	~	~	~	~	~	Drip at inlet

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 12 & 13

Weather: Sunny & clear, mid 70s, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs Source

*Overgrown w/ algae

Spring Sampling Point Description stock tank full & overflowing. Discharge taken from inlet pipe attached to wooden post. Discharge measured w/ 500 mL measuring cup.

Spring Flow Rate (gpm) 0.55 (Volume: 500mL Time: 14.33s)
500mL 14.12s
500mL 14.44s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:17	0.55	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 14 & 15

Weather: Sunny & clear, mid 70's, light breeze.

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North Source

*Overgrown w/ algae & vegetation

Spring Sampling Point Description Stock tank is full and overflowing. Discharge taken from inlet pipe located above stock tank. Discharge measured w/ 1-liter nalgene container.

Spring Flow Rate (gpm) 1.54 (Volume: 1000 mL Time: 10.27 s)

1000 mL 10.32 s

1000 mL 10.22 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:02	1.54	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 16 & 17

Weather: Sunny & clear, mid 70's, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South Source

* Overgrown w/ algae & vegetation

Spring Sampling Point Description Stock tank full. Discharge measured from inlet pipe attached to wood post. Discharge measured w/ 1-liter Nalgene container.

Spring Flow Rate (gpm) 9.24 (Volume: 1000 mL Time: 1.66 s)

1000 mL 1.77 s

1000 mL 1.72 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:16	9.24	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs Page No.: 1 of 1

Personnel: Cameron C. & Sean A.

Date: 9/26/17 Photos (#,Name): 18 & 19

Weather: Sunny & clear, mid 70's, 5mph N. wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Springs Source

Spring Sampling Point Description Tractor tire stock tank full. Discharge measurement taken from inlet pipe above tank, with 1-liter Nalgene container.

Spring Flow Rate (gpm) 0.98 (Volume: 1000 mL Time: 16.22 s)
1000 mL 16.30 s
1000 mL 16.16 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Cameron Carlson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:44	0.98	~	~	~	~	~	~	Flowing

Q4 2017

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 200 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6, lower 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3

WL Meas Point Desc: top cover, 3.16' AGS

Const Depth [ft, BMP]: 375

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:52	80.20							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top coupler, 2.32' AGS

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:57	82.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.94

WL Meas Point Desc: top 4", 2.37' AGS

Const Depth [ft, BMP]: 25

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:17	16.09							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thomson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 1.87' AGS

Notes: _____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:44	191.87							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 54766

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top coupler, 2.62' AGS

Const Depth [ft, BMP]: 45

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:33	32.96							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 800 ENG

Sounder Correction: None

Weather: cloudy, clear

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4", 2.40' AGS

Const Depth [ft, BMP]: 700

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:03	620.63							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top well cap, 3.38' AGS

Notes: _____

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:19	56.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thomson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 12

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:29	55.44							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 1", 1.49' AGS

Const Depth [ft, BMP]: 500

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:03	45.56							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top coupler, 2.81' AGS

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:19	88.34							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top coupler, 2.68' AGS

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:41	94.30							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 310 ENG

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.30

WL Meas Point Desc: hole in casing, 3.10' AGS

Const Depth [ft, BMP]: 203

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:47	88.32							sml

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 330 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.10' AGS

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:07	77.02							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top surf casing 3.40' AGS

Const Depth [ft, BMP]: 350

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:34	227.85							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6 x 6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25", 1.94' AGS

Notes: _____

Const Depth [ft, BMP]: 7.65

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:00	54.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler, 1.04' AGS

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:25	155.92							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thimpson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.04' AGS

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:50	164.51							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 301 ENG

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler 2.71' AGS

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: 

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:18	280.56							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thomson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top 4" 2.20' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N _____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:23	273.63							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 11-29-17

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: cool, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.13' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:41	141.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thomson

Date: 11-29-17

SPF Sounder #: SPF300ENG

Sounder Correction: None

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' blw drum top

WL Meas Point Desc: top 6", 2.67' AGS

Const Depth [ft, BMP]: 482

Locked? Y ____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
16:53	108.59							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: NIL

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.75

WL Meas Point Desc: top 4", 1.96' AGS

Const Depth [ft, BMP]: 405

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:06	141.23							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Personnel: J Thompson

Date: 11-29-17

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: cool, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.25

WL Meas Point Desc: top 24, 2' AGS

Const Depth [ft, BMP]: 425

Locked? Y ✓ N ____

Well Condition: good- cover and cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
17:26	57.90							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod - 1 Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 1, 2

Weather: Low 40's, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No.: Prod - 1. Water flowing from upper tee. No flow from lower tee. Upper valve open.

Spring Sampling Point Description Cattle fence around wellhead. Upper pipe on discharge split used.

Spring Flow Rate (gpm) 0.34 (Volume: 500 mL Time: 23.90s, 23.44s, 23.47s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:02	0.34							flowing - upper pipe

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Depost Stock Tank Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 3, 4, 5

Weather: Low 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Depost stock tank source

Spring Sampling Point Description South tank dry. North tank full and surface is frozen over. Flow measured at north tank inlet pipe

Spring Flow Rate (gpm) 0.29 (Volume: 500mL Time: 27.26s, 27.63s, 28.08s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Se Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:16	0.29	—	—	—	—	—	—	Flow at inlet pipe (north tank)

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 6, 7

Weather: Low 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs source. Stock tank empty. Water dripping along length of cracked HDPE onto ground, forming muddy area around tank

Spring Sampling Point Description Broken HDPE pipe dripping water on ground. Flow likely not representative as only some of the drops could be caught.

Spring Flow Rate (gpm) 0.03 (Volume: 200 mL Time: 96.73s, 102.33s, 101.67s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:42	0.03	—	—	—	—	—	—	Flow from cracked HDPE

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 8, 9

Weather: low 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison springs. Concrete box at ground level surrounded by swampy ground. Box overgrown with algae.

Spring Sampling Point Description No water flowing over box edges. Water flowing out of crack in west side of box. Very small gap between crack and swamp surface. Difficult to measure.

Spring Flow Rate (gpm) 1.73 (Volume: 500 mL Time: 4.84 s, 4.33 s, 4.61 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:20	1.73	—	—	—	—	—	—	Flow out of crack

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 10, 11

Weather: Low 40s, breezy, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Inlet pipe comes from ground and discharges into large rectangular stock tank.

Spring Sampling Point Description Discharge measured at inlet pipe covered by large metal screen.

Spring Flow Rate (gpm) 5.13 (Volume: 1000 mL Time: 3.01s, 3.03s, 3.24s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:42	5.13	—	—	—	—	—	—	Flowing at inlet

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lower Sourdough Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 12, 13

Weather: Low 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs source. Pipe sticking out of ground horizontally. Surface of water in both tanks is frozen.

Spring Sampling Point Description Upper tank full, lower tank half full. Inlet pipe frozen, no flow

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Alb

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:06	N/A	—	—	—	—	—	—	Not flowing. Frozen

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 14, 15

Weather: Low 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs source. Inlet pipe discharges into tank.

Spring Sampling Point Description Stock tank full and overflowing. Flow rate collected at inlet pipe attached to wooden post.

Spring Flow Rate (gpm) 0.63 (Volume: 500 mL Time: 12.16s, 12.80s, 12.52s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:19	0.63	—	—	—	—	—	—	Flowing.

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 16,17

Weather: mid 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North source. Inlet pipe discharges water into rectangular tank. Lots of algae on surface. Tank surrounded by shallow water and mud.

Spring Sampling Point Description Stock tank is full and overflowing. Flow test done at inlet pipe above stock tank

Spring Flow Rate (gpm) 1.41 (Volume: 1000 mL Time: 11.45s, 10.97s, 11.28s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Alb

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:44	1.41	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 18, 19

Weather: mid 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South source. Inlet pipe discharges into stock tank. Water flows out of tank into nearby draw.

Spring Sampling Point Description Stock tank full. Water flowing over sides of tank. Flow measurement collected from inlet pipe attached to wood post.

Spring Flow Rate (gpm) 8.22 (Volume: 1000 mL Time: 1.92s, 1.85s, 2.02s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:10	8.22	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 20, 21

Weather: mid 40s, mostly cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Springs source. Inlet pipe discharges to circular stock tank.

Spring Sampling Point Description Tractor tire stock tank full and water is flowing over northern rim. Flow measurement collected from metal inlet pipe above tank.

Spring Flow Rate (gpm) 0.92 (Volume: 1000 mL Time: 17.15 s)

17.18 s

17.60 s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:36	0.92	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Love Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 22, 23, 24

Weather: mid 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Broken HDPE pipe protruding from hillside discharges onto muddy ground below. Nearby stock tank is empty. Tank is surrounded by muddy ground.

Spring Sampling Point Description Flow measurement collected from broken HDPE pipe.

Spring Flow Rate (gpm) 0.44 (Volume: 500 mL Time: 18.43s, 18.04s, 17.85s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:18	0.44	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 25, 26, 27, 28

Weather: mid 40s, few clouds

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral Springs source. Inlet pipe discharges to uppermost stock tank. Water then flows into second tank, then into outlet pipe. Outlet pipe carries water to lowest stock tank ~100 yds downhill. Lower tank drains to ground.

Spring Sampling Point Description All 3 stock tanks are full. Spring flow measured at inlet pipe for uppermost stock tank. Flow from upper to lower tank measured at outlet of pipe between tanks.

Spring Flow Rate (gpm) 1.09 (Volume: 500 mL Time: 7.38s, 7.17s, 7.34s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: SC Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:51	1.09	–	–	–	–	–	–	Flowing

Lower tank flow
500 mL 8.01s
7.68s
7.69s

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 11/29/17 Photos (#,Name): 29, 30, 31

Weather: mid 40s, mostly clear, light breeze

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs source. Inlet pipe discharges to circular trough. Outlet of first trough carries water through pipe to lower trough ~10 yards away.

Spring Sampling Point Description Tractor tire tanks are mostly full. Surfaces 50% covered with algae. Outlet pipes submerged. Inlet to lower tank submerged. Flow measured at inlet to upper tank.

Spring Flow Rate (gpm) 1.62 (Volume: 500 mL Time: 4.85s, 4.96s, 4.83s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:23	1.62	—	—	—	—	—	—	Flowing

Q1 2018

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 300 ENV

Sounder Correction: None

Weather: 40's, sunny

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6, lower 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3

WL Meas Point Desc: top corner, 3.16' AGS

Const Depth [ft, BMP]: 375

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:43	80.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thomson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF310ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.32' AGS

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:05	82.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF300ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.94

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.37' AGS

Notes: _____

Const Depth [ft, BMP]: 25

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:21	15.94							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"; 1.87' AGS

Notes: _____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:42	191.68							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 3-7-18
SPF Sounder #: SPF 300 ENV
Sounder Correction: none
Weather: 40's, sunny
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.80
WL Meas Point Desc: top coupler, 2.62' AGS
Const Depth [ft, BMP]: 45
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____
GPS Coord. (UTM 11N, NAD83)
Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:32	32.94							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 54762

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 800 ENV

Sounder Correction: none

Weather: 40's, sunny

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4", 2.40' AGS

Const Depth [ft, BMP]: 700

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:33	621.63							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 300 ENV

Sounder Correction: Nine

Weather: 40's, sunny

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top well cap, 3.38' AGS

Const Depth [ft, BMP]: 550

Locked? Y _____ N ✓ broken

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:48	54.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENK

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 12

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:05	55.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6x6

Type: _____ HP: _____

Well Casing Diam (in): 1

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1", 1.49' AGS

Notes: _____

Const Depth [ft, BMP]: 500

Water Quality

Locked? Y ✓ N ____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:13	45.49							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 5976 1

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: Auto

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.81' AGS

Notes: _____

Const Depth [ft, BMP]: 118

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:20	88.41							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: 40s, sunny

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top coupler, 2.68' AGS

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: good - cone pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:28	94.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: 40's, sunny

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.30

Drop Pipe Diam (in): _____

WL Meas Point Desc: hole in casing, 3.10' AGS

Notes: _____

Const Depth [ft, BMP]: 203

Water Quality

Locked? Y _____ N ✓ broken

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:25	88.32							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.10' AGS

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
12:36	76.48							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top surf casing 3.40' AGS

Notes: _____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:56	228.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thomson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF300ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6 x 6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 200

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25", 1.94' AGS

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:08	55.84							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): —

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 0.85

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler 1.04' AGS

Notes: _____

Const Depth [ft, BMP]: 175

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): /

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): /

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): /

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:51	155.61							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: None

Weather: 40's, cloudy

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.20

WL Meas Point Desc: top 4" 2.04' AGL

Const Depth [ft, BMP]: 325

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: J. Thompson

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:13	164.41							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SAF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.92

Drop Pipe Diam (in): _____

WL Meas Point Desc: top curber 2.71' AGS

Notes: _____

Const Depth [ft, BMP]: 323

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cmc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:39	280.29							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPE300 ENL

Sounder Correction: none

Weather: 40's, cloudy

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: 2.20' AGS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Sampler Signature: [signature]

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:44	273.43							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NONE

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.13' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:52	141.01							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Personnel: J Thompson

Date: 3-7-18

SPF Sounder #: SPF 300 ENV

Sounder Correction: AWC

Weather: 40's, cloudy

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): NA

Well Casing Diam (in): 12

Surface Casing Height AGL (ft): 0.53' h/w drum top

WL Meas Point Desc: top 6", 2.67' AGS

Const Depth [ft, BMP]: 482

Locked? Y _____ N ✓

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:01	108.06							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: NAC

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 1.96' AGS

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:16	141.40							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 3-7-18

Photos (#,Name): _____

SPF Sounder #: SPF30 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: 40's, cloudy

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2"; 2' AGS

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:35	57.78							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring

Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018

Photos (#,Name): 1, 2

Weather: Sunny, low 40's

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs source. Stock tank empty. Water dripping along length of cracked/stubbed HDPE onto ground next to tank. Area around tank muddy

Spring Sampling Point Description Broken HDPE pipe dripping water next to tank. Flow likely not representative as only some of drips are captured by measuring cup.

Spring Flow Rate (gpm) 0.02 (Volume: 100 mL Time: 77.84 / 79.69 / 85.54)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
9:57	0.02	—	—	—	—	—	—	Dripping

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank

Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018

Photos (#,Name): 3, 4, 5

Weather: Low 40s, sunny

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank source

Spring Sampling Point Description South tank dry, north tank full but surface frozen. Flow measured at north tank inlet pipe. Lower flow than last time?

Spring Flow Rate (gpm) 0.40 (Volume: 500 mL Time: 19.66 s)
20.08 s
20.13 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albertson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:18	0.40	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 6, 7

Weather: 40s, sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Well No.: Prod-1. Water flowing from upper tee. No flow from lower tee. Upper valve open. Cattle fence around well head.

Spring Sampling Point Description Upper pipe on discharge tee used for flow measurement.

Spring Flow Rate (gpm) 0.87 (Volume: 500 mL Time: 9.00 s)
9.08 s
9.18 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sn Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:42	0.87	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 8, 9

Weather: 40's, sunny

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Springs. Concrete box at ground level surrounded by swampy ground. Box overgrown with algae

Spring Sampling Point Description No water flowing over box edges. Water flowing out of crack in west side of box. Small gap between crack and swamp surface Difficult to measure

Spring Flow Rate (gpm) 1.77 (Volume: 500 mL Time: 4.49 s, 4.64 s, 4.32 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:08	1.77	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 10, 11

Weather: 40's, sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Inlet pipe comes from ground and discharges into large rectangular stock tank.

Spring Sampling Point Description Discharge measured at inlet pipe covered by large metal screen

Spring Flow Rate (gpm) 5.39 (Volume: 1000 mL Time: 2.97 s)
2.89 s
2.97 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
1127	5.39	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower

Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018

Photos (#,Name): 12, 13

Weather: 40's, sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs source. Pipe sticking out of ground horizontally over upper tank. Surface of upper and lower tanks frozen. Upper tank 80% full, lower 25% full.

Spring Sampling Point Description Discharge measured from pipe sticking out of ground. No flow. Pipe may be partially clogged.

Spring Flow Rate (gpm) 0 (Volume: 0 Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:52	0	—	—	—	—	—	—	No flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 14, 15

Weather: 40's, sunny, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs source. Inlet pipe discharges into tank. Stock tank full and overflowing.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post.

Spring Flow Rate (gpm) 0.65 (Volume: 500 mL Time: 12.41 s, 11.90 s, 12.16 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: S. Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:06	0.65	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 16, 17

Weather: 40's, partly cloudy, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North source. Inlet pipe discharges into rectangular stock tank. Tank overgrown with algae and aquatic plants. Tank surrounded by shallow water and mud. Tank full.

Spring Sampling Point Description Flow measurement taken at inlet pipe above stock tank

Spring Flow Rate (gpm) 1.50 (Volume: 1000 mL Time: 10.59s, 10.54s, 10.56s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:31	1.50	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South

Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018

Photos (#,Name): 18, 19

Weather: 40s, cloudy, light wind

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South source. Inlet pipe discharges to stock tank. Water flows out of tank into nearby marsh. Tank full, water flowing.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post.

Spring Flow Rate (gpm) 10.75 (Volume: 1000mL Time: 1.54s, 1.39s, 1.50s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:51	10.75	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 20, 21

Weather: 40s, cloudy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Springs source. Inlet pipe discharges to circular fire stock tank. Tank full and water flowing over sides.

Spring Sampling Point Description Flow measurement collected from inlet pipe above tank

Spring Flow Rate (gpm) 0.95 (Volume: 1000 mL Time: 16.68 s, 16.67 s, 16.79 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:13	0.95	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring
Page No.: 1 of 1
Personnel: Sean Albertson
Date: 3/7/2018
Photos (#,Name): 22, 23, 24
Weather: 40s, cloudy, breezy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Broken HDPE pipe sticking out of hillside discharges onto muddy ground below. Nearby stock tank is empty. Tank surrounded by muddy ground.

Spring Sampling Point Description Discharge measured from broken HDPE

Spring Flow Rate (gpm) 0.19 (Volume: 500 mL Time: 42.69s, 42.26s, 43.04s)

Water Quality

Sample Time: _____
Field Filtered? Y _____ N _____
Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____
Transfer Blank Set Collected? Y _____ N _____
Duplicate Set Collected? Y _____ N _____

Sampler Signature: Se Alb

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:04	0.19	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral

Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018

Photos (#,Name): 25, 26, 27, 28

Weather: 40's, cloudy, breezy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral springs source. Inlet pipe discharges to uppermost stock tank. Water then flows into second tank, then into outlet pipe. Outlet pipe dives and carries water to lowest stock tank ~100 yds downhill. Lower tank drains to ground. Upper tanks full.

Spring Sampling Point Description Flow measured at inlet pipe for uppermost stock tank. Flow from upper to lower tank measured at outlet of pipe between tanks

Spring Flow Rate (gpm) 1.08 (Volume: 1000 mL Time: 14.65 s, 14.89 s, 14.54 s)

Upper Tank

Lower Tank: 1000 mL, 14.69 s, 14.76 s, 14.94 s

Water Quality

~~Sample Time:~~ _____

~~Field Filtered? Y ____ N ____~~

~~Samples Filtered:~~ _____

~~Equip Blank Set Collected? Y ____ N ____~~

~~Transfer Blank Set Collected? Y ____ N ____~~

~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: Sean Albertson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:48	1.08	—	—	—	—	—	—	Flowing

Lo

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 3/7/2018 Photos (#,Name): 29, 30, 31, 32

Weather: low 40s, cloudy, breezy

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs source. Inlet pipe discharges to upper circular trough. Outlet of ~~fr~~ upper trough carries water to lower trough ~ 10 yds away. Fiberglass trough empty nearby. Circular troughs full, covered in algae. Concrete troughs dry.

Spring Sampling Point Description All pipes subnerged, flow cannot be measured.

Spring Flow Rate (gpm) N/A (Volume: N/A Time: N/A)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:22	0	—	—	—	—	—	—	Pipes subnerged

Q2 2018

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Page No.: 1 of 1

Personnel: J Thomson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 310 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6, lower 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3

Drop Pipe Diam (in): _____

WL Meas Point Desc: top notch, 3.16' AGS

Notes: _____

Const Depth [ft, BMP]: 375

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

~~Required Purge Time (min):~~ _____

~~Duplicate Set Collected? Y _____ N _____~~

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:32	79.67							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: NONE

Weather: sunny, warm

Wat Lev Transducer Download? Y ✓ N ____

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top coupler, 2.32' AGS

Const Depth [ft, BMP]: 370

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

~~Required Purge Time (min):~~ ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:53	81.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 700 ENV

Sounder Correction: None

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.94

WL Meas Point Desc: top 4", 2.37' AGS

Const Depth [ft, BMP]: 25

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

~~Required Purge Time (min):~~ ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:10	16.79							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 1.87' AGS

Notes: _____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: Good, lock and cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:35	191.46							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766
Personnel: J Thompson
Date: 6-26-18
SPF Sounder #: SPF 300 ENV
Sounder Correction: none
Weather: sunny, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8
Well Casing Diam (in): 4
Surface Casing Height AGL (ft): 2.80
WL Meas Point Desc: top rim, 2.62' AGS
Const Depth [ft, BMP]: 45
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____
GPS Coord. (UTM 11N, NAD83)
Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: J Thompson

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:23	33.03							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Personnel: J Thompson

Date: 6-21-18

SPF Sounder #: SIF 800 ENG

Sounder Correction: None

Weather: SUNNY, WARM

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.77

WL Meas Point Desc: top 4", 2.40' AGS

Const Depth [ft, BMP]: 700

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:20	621.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1
Personnel: J Thompson
Date: 6-26-18
SPF Sounder #: SPF 300 ENG
Sounder Correction: NONE
Weather: sunny, warm
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): NA
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.40
WL Meas Point Desc: top well cap, 3.38' AGS
Const Depth [ft, BMP]: 550
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
Required Purge Time (min): ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:43	54.50							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 12

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:58	54.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: Air

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 1"; 1.49' AGS

Const Depth [ft, BMP]: 500

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:06	45.14							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Personnel: J Thomsen

Date: 6-26-18

SPF Sounder #: SPF300END

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.00

WL Meas Point Desc: top cooler, 2.81' AGS

Const Depth [ft, BMP]: 118

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:15	88.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 301 ENV

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.90

WL Meas Point Desc: top coupler, 2.68' AGS

Const Depth [ft, BMP]: 207

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

~~Required Purge Time (min):~~ ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:23	94.42							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760
Personnel: J Thompson
Date: 6-26-18
SPF Sounder #: SPF 300 ENG
Sounder Correction: NAC
Weather: SUNNY, WARM
Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10
Well Casing Diam (in): 6
Surface Casing Height AGL (ft): 3.30
WL Meas Point Desc: hole in casing, 3.10' AGS
Const Depth [ft, BMP]: 203
Locked? Y ✓ N ____
Well Condition: good

Casing Purge

3x Casing Volume (gal): ____
Flow Rate (gpm): ____
~~Required Purge Time (min):~~ ____

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____
Easting: ____

Pump Description

Permanent: ____ Temporary: ____
Type: ____ HP: ____
Setting Depth (ft): ____
Drop Pipe Diam (in): ____
Notes: ____

Water Quality

Sample Time: ____
Field Filtered? Y ____ N ____
Samples Filtered: ____
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ____ N ____
~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:19	88.49							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF300ENG

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 2

Surface Casing Height AGL (ft): 2.41

WL Meas Point Desc: top 2", 2.10' ABS

Const Depth [ft, BMP]: 915

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

~~Required Purge Time (min):~~ ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

~~Duplicate Set Collected? Y ____ N ____~~

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:31	76.41							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 6

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 3.40

WL Meas Point Desc: top surf casing 3.40' AGS

Const Depth [ft, BMP]: 350

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:20	229.57							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6x6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 200

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 1.25", 1.94' AGS

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:30	57.20							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: Sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): —

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler, 1.04' AGS

Const Depth [ft, BMP]: 175

Locked? Y ✓ N ____

Well Condition: good

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: [signature]

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:10	155.57							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.04' AGS

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:31	164.50							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 2.92

WL Meas Point Desc: top coupler, 2.71' AGS

Const Depth [ft, BMP]: 323

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:47	280.25							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Personnel: J Thompson

Date: 6-26-18

SPF Sounder #: SPF 300 ENV

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: 2-20' ABS

Const Depth [ft, BMP]: 305

Locked? Y ✓ N ____

Well Condition: good - conc pad cracked

Casing Purge

3x Casing Volume (gal): ____

Flow Rate (gpm): ____

Required Purge Time (min): ____

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ____

Type: ____ HP: ____

Setting Depth (ft): ____

Drop Pipe Diam (in): ____

Notes: ____

Water Quality

Sample Time: ____

Field Filtered? Y ____ N ____

Samples Filtered: ____

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ____ N ____

Duplicate Set Collected? Y ____ N ____

Sampler Signature: ____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:52	273.50							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.73' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:01	141.06							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 7-25-18

Photos (#,Name): _____

SPF Sounder #: SPF 340 END

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, hot

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 12

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 0.53' blw drum top

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 6", 2.67' ABS

Notes: _____

Const Depth [ft, BMP]: 482

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:38	108.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 1.96' AGS

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone lid cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:37	141.21							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thimpson

Date: 6-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENT

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: Sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2' AGS

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
15:55	57.77							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 1, 2

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Springs source. Tank empty. Water dripping from broken/stubbed HDPE pipe coming from ground near tank. Ground muddy around tank.

Spring Sampling Point Description Broken HDPE pipe dripping water next to stock tank. Flow likely not representative since only some of the dripping water could be caught by measuring cup.

Spring Flow Rate (gpm) 0.02 (Volume: 100mL Time: 103.01s)
100mL 98.00s
100mL 108.71

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Se Alb

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:25	0.02	—	—	—	—	—	—	Dripping

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 3, 4, 5

Weather: Sunny, high 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank Source. ~~Steel pipe into~~

Spring Sampling Point Description South tank empty. North tank low (~10% full) Flow measured at steel inlet pipe to north tank. Much lower water level and flow than previous measurements

Spring Flow Rate (gpm) 0.14 (Volume: 500mL Time: 55.77s)
500mL 56.09s
500mL 55.08s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:49	0.14	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod-1 Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/28/2018 Photos (#,Name): 6, 7

Weather: Sunny, high 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Prod-1 Well. Water flowing from upper tee. No flow from lower tee. Upper valve open. Cattle fence around well head.

Spring Sampling Point Description Upper discharge tee used for flow measurement

Spring Flow Rate (gpm) 0.85 (Volume: 500 mL Time: 9.29 s)
500 mL 9.10 s
500 mL 9.44 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:08	0.85	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 8, 9, 10

Weather: Sunny, high 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Spring. Concrete box at ground level surrounded by swamp. Box overgrown with algae.

Spring Sampling Point Description No water flowing over box edge. Water flowing out of crack in west side of box. Small gap between crack and swamp surface. Difficult to measure

Spring Flow Rate (gpm) 2.43 (Volume: 500 mL Time: 3.63 s)
3.24 s
2.99 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albert

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:31	2.43	—	—	—	—	—	—	

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 11, 12

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Inlet pipe emerges from ground and discharges into large rectangular tank.

Spring Sampling Point Description Discharge measured at inlet pipe covered by large metal screen.

Spring Flow Rate (gpm) ~~TS~~ 9.12 (Volume: 1000mL Time: 1.94s, 1.58s, 1.73s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:48	9.12	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 13, 14

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs. Pipe sticking out of ground horizontally over upper tank. Upper and lower tanks overgrown with algae. Upper tank ~ 80% full, Lower tank ~ 33% full.

Spring Sampling Point Description Discharge measured at pipe inlet to upper tank. No flow. Pipe may be clogged.

Spring Flow Rate (gpm) 0 (Volume: 0 Time: —)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:11	0	—	—	—	—	—	—	No flow

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Upper Sourdough Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 15, 16

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs. Inlet pipe discharges into tank. Stock tank full and overflowing. Tank surrounded by sediment.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post on uphill side of tank

Spring Flow Rate (gpm) 0.42 (Volume: 500 mL Time: 18.71s, 19.35s, 19.23s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:24	0.42	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs North Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 17, 18

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs North source. Inlet pipe discharges to rectangular stock tank. Area around tank is drier than during previous measurement. Tank full

Spring Sampling Point Description Flow measurement taken at inlet pipe

Spring Flow Rate (gpm) 1.47 (Volume: 1000 mL Time: 11.16 s, 10.66 s, 10.57 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:47	1.47	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 19, 20

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South source. Inlet pipe discharges to stock tank. Water flows out of tank into nearby marsh. Tank full, water flowing over ~~se~~ end.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post.

Spring Flow Rate (gpm) 9.89 (Volume: 1000 mL Time: 1.58s, 1.60s, 1.63s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Se Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:58	9.89	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 21, 22

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Spring source. Inlet pipe discharges to circular fire stock tank. Tank full and water flowing over sides.

Spring Sampling Point Description Flow measurement collected from inlet pipe above tank

Spring Flow Rate (gpm) 0.91 (Volume: 1000 mL Time: 17.37s, 17.48s, 17.36s)

Water Quality

Sample Time: _____

Field Filtered? Y ~~N~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albertson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:23	0.91	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/18 Photos (#,Name): 23, 24, 25

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown, Broken HDPE pipe sticking out of hillside discharges onto muddy ground below. Nearby stock tank empty. Ground drier around tank than during previous measurement.

Spring Sampling Point Description Flow measured at broken HDPE. May not be representative of total flow due to multiple streams

Spring Flow Rate (gpm) 0.09 (Volume: 200mL Time: 34.36s, 33.92s, 33.98s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Albertson

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:31	0.09	~	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 26, 27, 28, 29

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral Springs. Inlet pipe discharges to uppermost stock tank. Water then flows into second tank, then into outlet pipe. Outlet pipe dives and carries water to lowest stock tank ~ 100 yds downhill. Lowest tank drains to ground. Upper tanks fill.

Spring Sampling Point Description Flow measured at inlet pipe to uppermost stock tank. Flow from upper to lower tank measured at outlet of pipe between tanks (in lowest tank)

Spring Flow Rate (gpm) 1.66 (Volume: 1000mL Time: 9.17s) Upper Tank

9.82s

9.67s

Lower Tank

~~1000~~ 500mL 17.74s

17.88s

18.01s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Albt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:57	1.66	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Springs Page No.: 1 of 1

Personnel: Sean Albertson

Date: 6/26/2018 Photos (#,Name): 30, 31, 32, 33

Weather: Sunny, 80s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Springs source. Inlet pipe discharges into upper circular tire trough. Outlet of upper trough carries water to lower circular tire trough ~10 yds away. Fiberglass trough uphill of upper tire trough is empty. Two rectangular concrete troughs near upper tire trough dry. Upper tire trough covered in algae.

Spring Sampling Point Description Inlet to upper tire tank just above waterline. Difficult to measure. Lower tire tank inlet submerged, cannot be measured.

Spring Flow Rate (gpm) 1.39 (Volume: 500 mL Time: 5.91 s, 5.78 s, 5.43 s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Se Alb

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:27	1.39	—	—	—	—	—	—	Flowing

Q3 2018

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-4

Personnel: J Thompson

Date: 9-26-18

SPF Sounder #: SPF 300 ENT

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 6, lower 10

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 3

WL Meas Point Desc: top coupler, 3.16' AGS

Const Depth [ft, BMP]: 375

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:49	80.01							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-4

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.52

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupling, 2.32' AGS

Notes: _____

Const Depth [ft, BMP]: 370

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:02	81.86							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59768

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Sunny, Warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.94

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.37' AGS

Notes: _____

Const Depth [ft, BMP]: 25'

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:24	17.12							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-5

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 1.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 1.87' AGS

Notes: _____

Const Depth [ft, BMP]: 265

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:48	191.53							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59766

Personnel: J Thompson

Date: 9-26-18

SPF Sounder #: SPF 300 ENG

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y _____ N ✓

Well Description

Surface Casing Diam (in): 8

Well Casing Diam (in): 4

Surface Casing Height AGL (ft): 2.80

WL Meas Point Desc: top coupler, 2.62' AGS

Const Depth [ft, BMP]: 45

Locked? Y ✓ N _____

Well Condition: good

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
9:37	33.07							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 800 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.77

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.40' AGS

Notes: _____

Const Depth [ft, BMP]: 700

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:37	621.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: PW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top well cap, 3.38' AGS

Notes: _____

Const Depth [ft, BMP]: 550

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
10:56	54.44							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 12

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.50

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 3.68' AGS

Notes: _____

Const Depth [ft, BMP]: 156

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:06	54.92							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-10

Personnel: J Thompson

Date: 9-26-18

SPF Sounder #: SPF300 ENV

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Well Description

Surface Casing Diam (in): 6x6

Well Casing Diam (in): 1

Surface Casing Height AGL (ft): 1.90

WL Meas Point Desc: top 1", 1.49' AGS

Const Depth [ft, BMP]: 500

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:18	45.47							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59761

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.00

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.81' AGS

Notes: _____

Const Depth [ft, BMP]: 118

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:27	88.74							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59772

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.90

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.68' AGS

Notes: _____

Const Depth [ft, BMP]: 207

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:35	94.66							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59760

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.30

Drop Pipe Diam (in): _____

WL Meas Point Desc: hole in casing, 3.10' AGS

Notes: _____

Const Depth [ft, BMP]: 203

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:31	88.67							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 26-092-915

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.41

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.10' AGS

Notes: _____

Const Depth [ft, BMP]: 915

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:42	76.45							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-3

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300ENL

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 3.40

Drop Pipe Diam (in): _____

WL Meas Point Desc: top surf casing, 3.40' AGS

Notes: _____

Const Depth [ft, BMP]: 350

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:02	231.91							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 57-1

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: Sunny, Warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6x6

Type: _____ HP: _____

Well Casing Diam (in): 1.25

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 200

Drop Pipe Diam (in): _____

WL Meas Point Desc: Top 1.25", 1.94' AGS

Notes: _____

Const Depth [ft, BMP]: 765

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: Good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:10	71.54							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: BLM

Personnel: J Thompson

Date: 9-26-18

SPF Sounder #: SPF300 ENV

Sounder Correction: none

Weather: sunny, warm

Wat Lev Transducer Download? Y _____ N ✓

Page No.: 1 of 1

Photos (#,Name): _____

GPS Coord. (UTM 11N, NAD83)

Northing: _____

Easting: _____

Well Description

Surface Casing Diam (in): -

Well Casing Diam (in): 6

Surface Casing Height AGL (ft): 0.85

WL Meas Point Desc: top coupler, 1.64' AGS

Const Depth [ft, BMP]: 175

Locked? Y ✓ N _____

Well Condition: good

Pump Description

Permanent: _____ Temporary: _____

Type: _____ HP: _____

Setting Depth (ft): _____

Drop Pipe Diam (in): _____

Notes: _____

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Casing Purge

3x Casing Volume (gal): _____

Flow Rate (gpm): _____

Required Purge Time (min): _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:20	155.69							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENB

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y ✓ N _____

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 6

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.20

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 2.04' AGS

Notes: _____

Const Depth [ft, BMP]: 325

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:35	164.55							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59763

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 10

Type: _____ HP: _____

Well Casing Diam (in): 6

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.92

Drop Pipe Diam (in): _____

WL Meas Point Desc: top coupler, 2.71' AGS

Notes: _____

Const Depth [ft, BMP]: 323

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:54	280.39							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59764

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.80

Drop Pipe Diam (in): _____

WL Meas Point Desc: 2.20' AGS

Notes: _____

Const Depth [ft, BMP]: 305

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:00	273.62							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GW-6

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 310 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: None

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.73

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2.13' AGS

Notes: _____

Const Depth [ft, BMP]: 340

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good - cone pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:07	141.17							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: Bishop

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): NA

Type: _____ HP: _____

Well Casing Diam (in): 12

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 0.53' b/w drum top

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 6", 2.67' AGS

Notes: _____

Const Depth [ft, BMP]: 482

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:19	110.51							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59770

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENV

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.75

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 4", 1.96' AGL

Notes: _____

Const Depth [ft, BMP]: 405

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:34	141.27							SWL

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 89-2

Page No.: 1 of 1

Personnel: J Thompson

Date: 9-26-18

Photos (#,Name): _____

SPF Sounder #: SPF 300 ENG

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: none

Northing: _____

Weather: sunny, warm

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: _____

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 2

Setting Depth (ft): _____

Surface Casing Height AGL (ft): 2.25

Drop Pipe Diam (in): _____

WL Meas Point Desc: top 2", 2' AGS

Notes: _____

Const Depth [ft, BMP]: 425

Water Quality

Locked? Y ✓ N _____

Sample Time: _____

Well Condition: good, conc pad cracked

Field Filtered? Y _____ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): _____

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): _____

Transfer Blank Collected? Y _____ N _____

Required Purge Time (min): _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: _____

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:49	57.96							SWL

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Grassy Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 1, 2

Weather: Sunny, high 50s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Grassy Spring source. Tank empty. Ground around tank muddy with some puddles. Broken/stubbed HDPE pipe coming from hillside near tank.

Spring Sampling Point Description Broken HDPE pipe dripping water next to tank. Flow likely not representative since only part of the dripping water could be caught by measuring cup

Spring Flow Rate (gpm) 0.02 (Volume: 100 mL Time: 92.43s)
100 mL 90.66s
100 mL 99.12s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: San Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:24	0.02	—	—	—	—	—	—	Dripping

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Deposit Stock Tank Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 3, 4, 5

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Deposit Stock Tank source.

Spring Sampling Point Description South tank empty. North tank low (< ~~10~~ 5% full) Flow measured at steel inlet pipe to north tank. Flow is low, similar to ~~no~~ previous monitoring event in June 2018.

Spring Flow Rate (gpm) 0.17 (Volume: 500 mL Time: 46.45s)
" 47.29s
" 46.54s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
10:52	0.17	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Prod - 1 Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 6, 7

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Prod-1 Well. Water flowing from ~~upper~~ lower tee. No flow from upper tee. Cattle fence around well head has been removed.

Spring Sampling Point Description Lower discharge tee used for measurement.

Spring Flow Rate (gpm) 1.08 (Volume: 500mL Time: 7.31s)
" 7.21s
" 7.46s

Water Quality

Sample Time: _____

Field Filtered? Y ~~N~~

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sean Allen

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:06	1.08	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Poison Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 8,9,10

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Poison Spring Concrete box at ground level surrounded by swamp. Box

Spring Sampling Point Description No water flowing over box edge. Water flows through crack in west side of concrete box. Small gap between crack at swamp surface used as sampling point. Difficult to measure

Spring Flow Rate (gpm) 1.70 (Volume: 500 mL Time: 4.27 s)
" 4.93 s
" 4.86 s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y ____ N ____

Field Filtered? Y ____ N ____ Transfer Blank Set Collected? Y ____ N ____

Samples Filtered: _____ Duplicate Set Collected? Y ____ N ____

Sampler Signature: Sc Allat

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:26	1.70	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Negro Rock Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 11, 12

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown. Inlet pipe emerges from ground and discharges into large rectangular tank

Spring Sampling Point Description Discharge measured at inlet pipe covered by large metal screen.

Spring Flow Rate (gpm) 1.04 (Volume: 1000 mL Time: 15.34s)
" 15.18s
" 15.36s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sea Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
11:43	1.04	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Lower Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 13, 14

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Lower Sourdough Springs. Pipe sticking out of ground horizontally over upper tank. Lower tank empty. Upper Tank almost empty. Inlet pipe dripping, no steady flow.

Spring Sampling Point Description Discharge measured at pipe inlet to upper tank ~~No flow. Pipe may be clog~~ Minimal flow.

Spring Flow Rate (gpm) < 0.01 (Volume: 100 mL Time: 10+ min)

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sea Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:07	< 0.01	—	—	—	—	—	—	Dripping

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sourdough Upper Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 15, 16

Weather: Sunny, 60s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Upper Sourdough Springs. Inlet pipe discharges into tank. Stock tank full. Tank surrounded by muddy ground and some vegetation.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post on uphill side of tank.

Spring Flow Rate (gpm) 0.27 (Volume: 500 mL Time: 29.36s)
" 29.80s
" 28.95s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y ____ N ____

Field Filtered? Y ____ N ____ Transfer Blank Set Collected? Y ____ N ____

Samples Filtered: _____ Duplicate Set Collected? Y ____ N ____

Sampler Signature: Sean Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:22	0.27	–	–	–	–	–	–	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Tum Springs North Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 17, 18

Weather: Sunny, low 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Tum Springs North source. Inlet pipe discharges to rectangular stock tank. Area around tank dry Tank full.

Spring Sampling Point Description Flow measured at inlet pipe

Spring Flow Rate (gpm) 1.46 (Volume: 1000 mL Time: 10.97 s)
" 10.91 s
" 10.71 s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sea Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
12:45	1.46	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Twin Springs South Page No.: 1 of 1

Personnel: STA

Date: ~~8/2~~ 9/26/2018 Photos (#,Name): 19, 20

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Twin Springs South source. Inlet pipe discharges to stock tank. Water flows out of tank into nearby marsh. Tank full, water flowing over end.

Spring Sampling Point Description Discharge measured at inlet pipe attached to wooden post

Spring Flow Rate (gpm) 9.81 (Volume: 1000 mL Time: 1.64s)
" 1.48s
" 1.75s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y ____ N ____

Field Filtered? Y ____ N ____ Transfer Blank Set Collected? Y ____ N ____

Samples Filtered: _____ Duplicate Set Collected? Y ____ N ____

Sampler Signature: Sam Allott

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:07	9.81	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Whiskey Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 21, 22

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Whiskey Spring source. Inlet pipe discharges to circular tire stock tank. Tank full with water flowing over side.

Spring Sampling Point Description Flow measured at inlet pipe above tank.

Spring Flow Rate (gpm) 0.96 (Volume: 1000 mL Time: ~~22.44~~ 16.34 s)

" 16.74 s

" 16.71 s

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
13:36	0.96	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Lowe Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 23, 24, 25

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Unknown, Broken HDPE pipe sticking out of hillside discharges onto muddy ground below. Nearby stock tank empty. A second muddy area appeared by the empty tank.

Spring Sampling Point Description Flow measured at broken HDPE. May not be representative of total flow due to varying water stream

Spring Flow Rate (gpm) 0.06 (Volume: 100mL Time: 24.63s)
" 27.46s
" 22.89s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Allt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:32	0.06	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Government Corral Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 26, 27, 28, 29

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Government Corral springs source. Inlet pipe discharges to uppermost stock tank. Water then flows into second tank, then to outlet pipe. Outlet pipe dives and carries water to lowest stock tank ~100yds downhill. Lowest tank drains to ground. Upper tanks fill.

Spring Sampling Point Description Flow measured at inlet pipe to uppermost stock tank. Flow from upper to lower tank measured at outlet of pipe between tanks.

Spring Flow Rate (gpm) 1.55 (upper), 1.52 (lower) (Volume: upper 1000 mL, Time: 10.53s) lower 1000 mL 10.38s

" " 9.95s 10.19s

" " 10.15s 10.76s

Water Quality

Sample Time: _____ Equip Blank Set Collected? Y _____ N _____

Field Filtered? Y _____ N _____ Transfer Blank Set Collected? Y _____ N _____

Samples Filtered: _____ Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sam Abbott

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
14:52	1.55/1.52	—	—	—	—	—	—	Flowing

Grassy Mountain Spring Monitoring Sampling Form

Spring Name: Sagebrush Spring Page No.: 1 of 1

Personnel: STA

Date: 9/26/2018 Photos (#,Name): 30, 31, 32, 33

Weather: Sunny, 70s

GPS Coord. (UTM 11N, NAD83)

Northing: _____ Easting: _____

Spring Source Description Sagebrush Spring source. Inlet pipe discharges into upper circular tire trough. Outlet of upper trough carries water to lower circular tire trough, ~10 yds away. Fiberglass trough uphill for tire troughs is empty. Two rectangular concrete troughs near upper tire trough dry up

Spring Sampling Point Description Inlet to upper tire just above waterline. Difficult to measure. Lower tire tank inlet submerged, cannot measure.

Spring Flow Rate (gpm) 1.31 (Volume: 500 mL Time: 5.85s, 6.26s, 6.09s)

Water Quality

Sample Time: _____

Field Filtered? Y _____ N _____

Samples Filtered: _____

Equip Blank Set Collected? Y _____ N _____

Transfer Blank Set Collected? Y _____ N _____

Duplicate Set Collected? Y _____ N _____

Sampler Signature: Sa Abt

Time	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L]	DO [% Sat]	Notes (Visual Appearance)
15:34	1.31	—	—	—	—	—	—	Flowing

2017 and 2018 Sampling

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: 59762

Page No.: 1 of 1

Personnel: Kurt Newbry

Date: 12/06/2017

Photos (#,Name): _____

SPF Sounder #: 800ft non-stretch

GPS Coord. (UTM 11N, NAD83)

Sounder Correction: N/A

Northing: _____

Weather: Sunny, cold

Easting: _____

Wat Lev Transducer Download? Y _____ N ✓

Pump Description

Well Description

Permanent: _____ Temporary: ✓

Surface Casing Diam (in): 8

Type: _____ HP: _____

Well Casing Diam (in): 4

Setting Depth (ft): 555

Surface Casing Height AGL (ft): 2.79

Drop Pipe Diam (in): 1

WL Meas Point Desc: top of 1¼" PVC tube, =3.17' agl

Notes: _____

Const Depth [ft, BMP]: ~660

Water Quality

Locked? Y ✓ N _____

Sample Time: 15:00

Well Condition: _____

Field Filtered? Y ✓ N _____

Casing Purge

Samples Filtered: _____

3x Casing Volume (gal): 60

Equip Blank Collected? Y _____ N _____

Flow Rate (gpm): 1

Transfer Blank Collected? Y ✓ N _____

Required Purge Time (min): 60

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: Kurt Newbry

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
13:30	627.91	0						Pump on, on and off cloudy
13:46	640.13	1	6.68	1482	1687	18.4	3.38	minor cloudiness, minor sand
14:17	644.48	1	6.62	1603	1706	21.9	2.35	very minor cloudiness
14:35	~647	1	6.58	1623	1711	22.3	2.13	very minor cloudiness
14:56	652.55	1	6.54	1650	1730	22.6	2.09	very minor cloudiness

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ YSI Professional Plus
Date / Time of Calibration: 12/6/17 13:00
Calibration Method: 2 - point
Buffers Used: 7, 10
Slope Deviation:
Electrode Efficiency:
Successful Calibration? √ Yes ____ No
If No, List Corrective Action:
Signature: Kurt Nuss

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI Professional Plus
Date / Time of Calibration: 12/6/2017 12:40
Calibration Method: 1413 µs/cm standard
Cell Constant: √ Default? ____ Yes ____ No
Temperature Coefficient: √ Default? ____ Yes ____ No
Temperature Reference: √ Default? ____ Yes ____ No
Conductivity Standard: 1413 µs/cm
Conductivity Standard @ 25C: 5°C = 964
Successful Calibration? √ Yes ____ No
If No, List Corrective Action:
Signature: KN NN

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI Professional Plus
Date / Time of Calibration: 12/6/2017 12:36
Calibration Method: %
Initial DO Saturation Reading: 86.5 % (Should read 100.5%)
Calibration Needed? √ Yes ____ No
Calibration Precision: ____ Field √ Normal ____ High
Successful Calibration? √ Yes ____ No
If No, List Corrective Action:
Signature: Kurt Nuss

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GMW17-32

Personnel: Kurt Newbry

Date: 12/11/2017

SPF Sounder #: 800'

Sounder Correction: N/A

Weather: Overcast, cold

Wat Lev Transducer Download? Y ____ N ✓

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 5 PVC

Surface Casing Height AGL (ft): 2.52

WL Meas Point Desc: top of 1¼" monitoring tube = 3.05' agl

Const Depth [ft, BMP]: ~720'

Locked? Y ✓ N ____

Well Condition: ____

Casing Purge

3x Casing Volume (gal): 193.8

Flow Rate (gpm): ~2

Required Purge Time (min): 97

Page No.: 1 of 1

Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)

Northing: ____

Easting: ____

Pump Description

Permanent: ____ Temporary: ✓

Type: Grundfos SIS-31 HP: 5

Setting Depth (ft): 717'

Drop Pipe Diam (in): 1"

Notes: ____

Water Quality

Sample Time: 16:32

Field Filtered? Y ✓ N ____

Samples Filtered: 3

Equip Blank Collected? Y ____ N ____

Transfer Blank Collected? Y ✓ N ____

Duplicate Set Collected? Y ____ N ✓

Sampler Signature: Kurt Newbry

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:30	648.33	0						Pump on
11:42	669.80	2	11.93	1745	1930	19.1	1.69	cloudy, sandy.
11:52	683.60	2	11.98	1819	1958	21.4	1.05	
12:07	695.10	2	12.0	1882	1990	22.1	1.65	
12:37	709.24	2	12.03	2048	2199	22.5	0.96	
12:47	715.45	2→0.75						water close to intake, valve back flow
12:54	716.32	0.75	11.96	1858	1950	22.0	0.68	very cloudy, yellowish brown.
13:57	716.97	0.075	11.98	1889	1995	21.7	0.69	
13:15	717.70							pump breaking suction pump off
16:22	708.45	2						Pump on
16:27	709.10	2						
16:31	710.80	2	11.95	1880	1990	20.0	0.65	water clearing up, light cloudy
16:32		2	11.97	1887	2095	22.0	0.69	Sample water, slight cloudyness

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ YSI Pro-Plus
Date / Time of Calibration: 12/11/17 10:55
Calibration Method: 2 - point
Buffers Used: 4, 7
Slope Deviation:
Electrode Efficiency:
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: KT

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI Pro-Plus
Date / Time of Calibration: 12/11/17 10:55
Calibration Method: 1413 µs/cm standard
Cell Constant: ____ Default? ____ Yes ____ No
Temperature Coefficient: ____ Default? ____ Yes ____ No
Temperature Reference: ____ Default? ____ Yes ____ No
Conductivity Standard: 1413 µs/cm
Conductivity Standard @ 25C: @ 15°C 1169
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: KT

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI Pro-Plus
Date / Time of Calibration: 12/11/17 10:55
Calibration Method: %
Initial DO Saturation Reading: 89.4% at 15°C (Should read 100.5%)
Calibration Needed? / Yes ____ No
Calibration Precision: / Field ____ Normal ____ High
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: KT

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GMW17-33 Page No.: 1 of 1

Personnel: Kurt Newbry

Date: 12/14/2017 Photos (#,Name): _____

SPF Sounder #: Driller's Non-stretch sounder **GPS Coord. (UTM 11N, NAD83)**

Sounder Correction: calibration checked w/ SPF 800' non-stretch Northing: _____

Weather: overcast/cold Easting: _____

Wat Lev Transducer Download? Y _____ N /

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 5 PVC

Surface Casing Height AGL (ft): ~3

WL Meas Point Desc: top of 1¼" PVC monitoring tube

Const Depth [ft, BMP]: ~340

Locked? Y _____ N /

Well Condition: _____

Casing Purge

3x Casing Volume (gal): 260

Flow Rate (gpm): 30

Required Purge Time (min): ~9

Pump Description

Permanent: _____ Temporary: ✓

Type: A.Y. McDonald Mfg. Co. HP: 5

Setting Depth (ft): 340'

Drop Pipe Diam (in): 2 PVC

Notes: _____

Water Quality

Sample Time: 18:00

Field Filtered? Y ✓ N _____

Samples Filtered: 3

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y ✓ N _____

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:00	244.13	0	-	-	-	-	-	Pump On
14:03	248.90	30						
14:27	255.30	30	6.46	319	388	15.7	2.75	crystal clear, medium degassing, no odor, no sand
14:45	258.00	30	6.78	315	383	15.7	2.35	
15:08	259.34	30	6.88	312	379	15.7	2.17	
17:04	~266	30	6.95	278	338	15.7	1.66	
17:42	267.16	30	6.95	274	333	15.6	1.7	
18:20	267.60	30	6.95	268	327	15.7	1.68	clear, no sand, medium degassing, no odor

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ Hanna HI98131
Date / Time of Calibration: 12/13/2017 21:00
Calibration Method: ~~2-point~~ Single Point 6.88
Buffers Used: checked calibration with 4 and 7 buffers on 12/14/17
Slope Deviation:
Electrode Efficiency:
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI Pro-Plus
Date / Time of Calibration: 12/13/2017 21:00
Calibration Method: 1413µs/cm standard
Cell Constant: √ Default? ____ Yes ____ No
Temperature Coefficient: √ Default? ____ Yes ____ No
Temperature Reference: √ Default? ____ Yes ____ No
Conductivity Standard: 1413µs/cm
Conductivity Standard @ 25C: 1413µs/cm
Successful Calibration? √ Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI Pro-Plus
Date / Time of Calibration: 12/14/17 13:30
Calibration Method: % DO
Initial DO Saturation Reading: 86.7% (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: √ Field ____ Normal ____ High
Successful Calibration? √ Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GMW 17-32
Personnel: Kurt Newbry
Date: 7/25/2018
SPF Sounder #: TW800
Sounder Correction: 0.00' (N/A)
Weather: Sunny, Hot
Wat Lev Transducer Download? Y ____ N ✓

Page No.: 1 of 1
Photos (#,Name): ____

GPS Coord. (UTM 11N, NAD83)
Northing: ____
Easting: ____

Well Description
Surface Casing Diam (in): 12
Well Casing Diam (in): 5 (PVC)
Surface Casing Height AGL (ft): 2.52'
WL Meas Point Desc: top of monitoring tube = 3.32' agl
Const Depth [ft, BMP]: ~720'
Locked? Y ✓ N ____
Well Condition: ____

Pump Description
Permanent: ____ Temporary: ✓
Type: Grundfos SIS-31 HP: 5
Setting Depth (ft): 717' (in the screens)
Drop Pipe Diam (in): 1"
Notes: ____

Casing Purge
3x Casing Volume (gal): 205
Flow Rate (gpm): ~2.75
Required Purge Time (min): 75.5

Water Quality
Sample Time: 11:36
Field Filtered? Y ✓ N ____
Samples Filtered: 3
Equip Blank Collected? Y ____ N ____
Transfer Blank Collected? Y ✓ N ____
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: Kurt NW

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
11:18	650.55	3	11.44	1134	1390	59.6	1.45	Pump On, cloudy red water
11:27	672.19	3	11.22	1126	1270	66.1	0.51	cloudy red water
11:31								water clearing up
11:33	684.0							
11:36		2.6	10.74	1047	1118	71.1	2.76	water is clear, sample water
11:50		2.5						Done Sampling
11:54								water is starting to turn cloudy/red
11:56	701.45							
11:57		2.5	10.78	1126	1192	71.9	3.34	
12:00								cloudy red
12:04:30	768.70	2.5	11.06	1145	1209	72.1	2.62	dark cloudy red / pump off

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ YSI Pro-Plus
Date / Time of Calibration: 7/24/18 18:00
Calibration Method: ~~2-point~~ 3-point
Buffers Used: 4, 7, 10
Slope Deviation:
Electrode Efficiency:
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI Pro-Plus
Date / Time of Calibration: 7/24/18 18:00
Calibration Method: 1413µs/cm standard
Cell Constant: ____ Default? ____ Yes ____ No
Temperature Coefficient: ____ Default? ____ Yes ____ No
Temperature Reference: ____ Default? ____ Yes ____ No
Conductivity Standard: 1413µs/cm
Conductivity Standard @ 25C: 1413µs/cm
Successful Calibration? / Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI Pro-Plus
Date / Time of Calibration: 7/25/18 11:00
Calibration Method: % D.O.
Initial DO Saturation Reading: 88% (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: [signature]

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GMW 17-32
Page No.: 1 of 1
Personnel: Sean Albertson
Date: 12/5/2018
Photos (#,Name): _____
SPF Sounder #: N/A - no WL mnmt
GPS Coord. (UTM 11N, NAD83)
Sounder Correction: —
Northing: _____
Weather: Foggy, cold
Easting: _____
Wat Lev Transducer Download? Y ____ N ✓
Pump Description
Well Description
Permanent: ____ Temporary: ✓
Surface Casing Diam (in): 12
Type: submersible HP: _____
Well Casing Diam (in): 5 (PVC)
Setting Depth (ft): _____
Surface Casing Height AGL (ft): ~2.5
Drop Pipe Diam (in): _____
WL Meas Point Desc: —
Notes: _____
Const Depth [ft, BMP]: ~720'
Water Quality
Locked? Y ____ N ✓ Sampling eqpmt set up on arrival.
Sample Time: 9:20
Well Condition: good
Field Filtered? Y ✓ N ____
Casing Purge
Samples Filtered: 3 (metals, wet chem, Mercury)
3x Casing Volume (gal): _____
Equip Blank Collected? Y ____ N ____
Flow Rate (gpm): _____
Transfer Blank Collected? Y ✓ N ____
Required Purge Time (min): _____
Duplicate Set Collected? Y ____ N ✓

Sampler Signature: Sean Albertson

Time	DTW [BMP, ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
8:59	—	—	8.5					Pump on, water murky
9:05	—	—	8.67	1055	1321	14.5		ProPlus logging start
9:10	—	—	8.85	1117	1319	17.0		Water murky
9:13	—	—	8.61	1210	1361	19.2		Water clearing
9:16	—	—	8.54	1231	1367	19.8		Water clear
9:20	—	—	8.44	1245	1370	20.2		Sample collection
9:28	—	—	8.45	1250	1366	20.6		Trip blank collected
9:31	—	—	8.48	1230	1371	19.6		Pump off

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: YSI Professional Plus
Date / Time of Calibration: 12/4/2018 16:00
Calibration Method: 2 - point
Buffers Used: 7, 10 pH
Slope Deviation:
Electrode Efficiency:
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: Sen Allt

Instrument: Conductivity Meter
Manufacturer / Model: YSI Professional Plus
Date / Time of Calibration: 12/4/2018 16:20
Calibration Method: 1413 µS/cm standard solution
Cell Constant: ✓ Default? ____ Yes ____ No
Temperature Coefficient: ✓ Default? ____ Yes ____ No
Temperature Reference: ✓ Default? ____ Yes ____ No
Conductivity Standard: 1413 µS/cm
Conductivity Standard @ 25C: 5°C = 964 µS/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: Sen Allt

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: YSI Professional Plus
Date / Time of Calibration: N/A
Calibration Method:
Initial DO Saturation Reading: ____ (Should read 100.5%)
Calibration Needed? ____ Yes ____ No
Calibration Precision: ____ Field ____ Normal ____ High
Successful Calibration? ____ Yes ____ No
If No, List Corrective Action:
Signature:

Appendix K
Well Completion Reports (GMW17-31, 32, 33, and GMW18-34)

GMW17-31, GMW17-33, AND GMW18-34
WELLS COMPLETION REPORT

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT

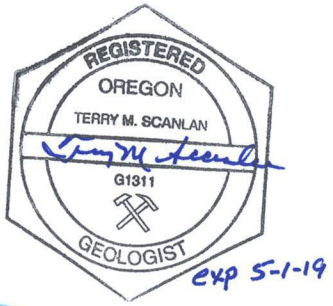
Prepared for

Calico Resources USA Corp.
P.O Box Q
220 Morton Street East
Vale, Oregon 97918

Prepared by

SPF Water Engineering, LLC
300 E. Mallard Drive, Suite 350
Boise, ID 83706

September 12, 2018



SPF WATER ENGINEERING

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1. INTRODUCTION

1.1. Background

A *Final Work Plan* (Plan) *for Grassy Mountain Monitoring Wells* prepared by SPF Water Engineering (SPF) dated November 28, 2016, was approved by the State of Oregon Technical Review Team (TRT) by letter dated January 6, 2017. The Plan described the location, construction, testing, and sampling of five proposed monitoring wells for Calico Resources USA Corp (Calico). These monitoring wells were proposed in the vicinity of the deposit for the purpose of aquifer characterization and to better understand the potential impacts of groundwater on mining operations, including potential dewatering requirements.

The two downgradient shallow wells (GMW17-31 and GMW17-33) and the downgradient deep well (GMW17-32) were constructed and tested in August through November of 2017. One upgradient deep well (GMW18-34) was completed in June of 2018.

The Plan also contemplated an upgradient shallow well. A Work Plan Adjustment dated March 22, 2018, proposed that the shallow well not be constructed if a shallow aquifer is not encountered during drilling of the upgradient deep well. The TRT approved the Work Plan Adjustment by letter dated May 31, 2018. Drilling of the deep upgradient well did not encounter shallow water, so the shallow upgradient well was not constructed.

This well completion report describes the drilling, construction, testing, and water quality sampling from the two downgradient shallow wells (GMW17-31 and GMW17-33) and the upgradient deep well (GMW18-34). A separate well completion report for the downgradient deep well (GMW17-32), dated August 20, 2018, has already been prepared and submitted to the TRT.

1.2. Site Location and Ownership

The downgradient wells are located in the SE¼ of the NW¼ of Section 8, T22S R44E. GMW17-31 is located approximately 800 feet north of the deposit and about 50 feet east of the pre-existing deep monitoring well 59762. GMW17-31 was constructed as the shallow pair to 59762. GMW17-33 is located approximately 600 feet northwest of the deposit. This well was constructed as the shallow pair to GMW17-32. The upgradient deep well GMW18-34 is located in the NW¼ of the SE¼ of Section 8, T22S R44E. GMW18-34 is located approximately 300 feet to the south of the deposit (Figure 1).

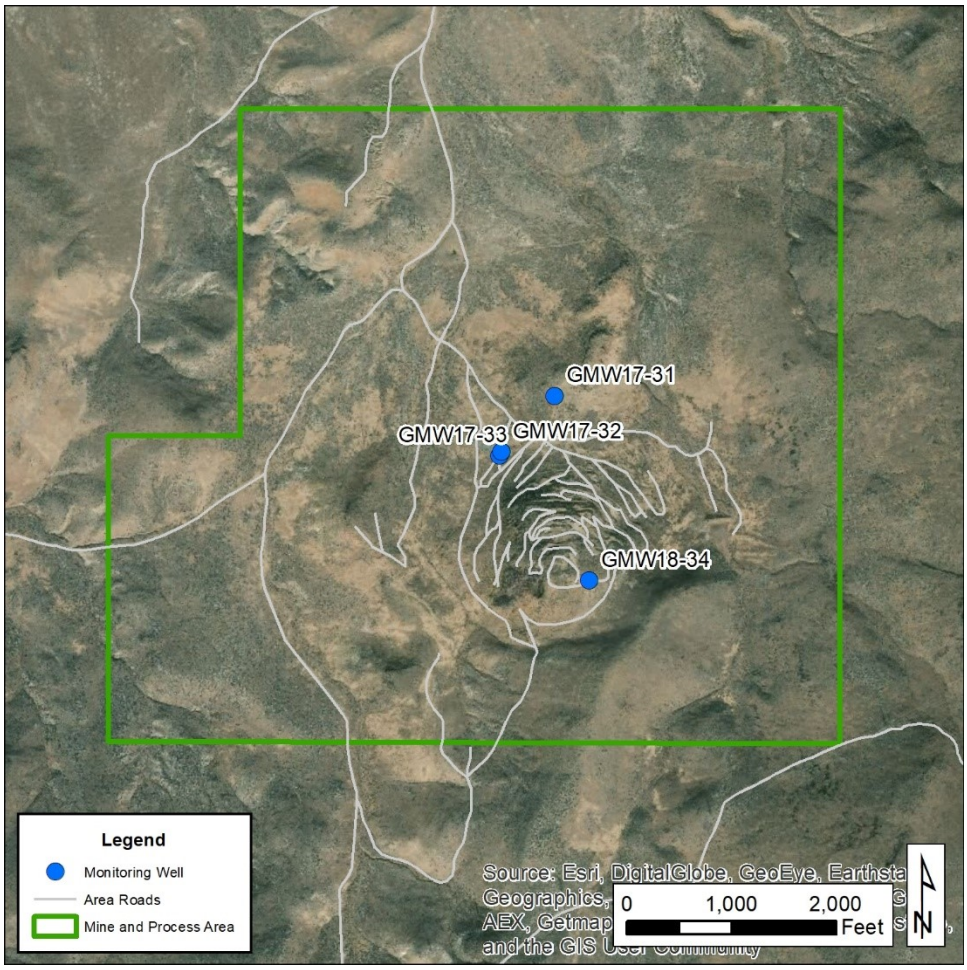


Figure 1. Vicinity map of monitoring wells

2. GMW17-31

2.1. Well Drilling and Construction

2.1.1. Introduction

Well construction began on August 1, 2017, and was completed on August 28, 2017. The well was constructed using the air-rotary method of drilling by Down Right Drilling & Pump Inc. (Down Right), Oregon well driller's license number 1896. The well was constructed under start card number 1035606. The State of Oregon Monitoring Well Report is included in Attachment A.

2.1.2. Surface Casing Installation and Seal

As the first step in the well construction process, a nominal 10-inch borehole was drilled to 150 feet through the surface overburden (0 to 8 feet), sandstone, siltstone and clay (8 to 41 feet), conglomerate, sandstone, siltstone (trace of silicified siltstone), and clay (41 to 60 feet), clay (60 to 147 feet), and sandstone, siltstone, and tuff (147 to 150 feet). The

lithologic log prepared by Calico geologist Michael McGinnis is included in Attachment B. The 10-inch bore was then reamed to a 16-inch bore from the surface to 98 feet for installation of a 12-inch casing.

A nominal 12-inch diameter mild steel casing with 0.250-inch wall thickness was installed from approximately 36 inches above ground surface to a depth of 98 feet. The annulus between the 12-inch casing and the 16-inch bore was sealed from 98 to 38 feet with 49 ft^3 of Portland type I/II neat cement grout pumped through a tremie pipe from the bottom up. This volume of cement is approximately 151% the calculated volume of a 60-foot-long 12.5-inch (casing outside diameter) to 16-inch annulus. The surface seal was completed from 38 feet up to ground surface using 25 ft^3 of bentonite chips. This volume of bentonite chip is approximately 122% the calculated volume of a 38-foot-long 12.5-inch to 16-inch annulus.

2.1.3. Borehole Drilling

Following installation and sealing of the surface casing, the original nominal 10-inch bore was cleaned out to 150 feet and then advanced from 150 to 520 feet by air rotary drilling. No water was encountered during the drilling. Drilling encountered the following lithology as described on the lithologic log in Attachment B:

- sandstone, arkose, siltstone, and tuff to a depth of 247 feet, with an increase in clay (up to 40%) 182-197 feet and 227-247 feet
- sinter and siltstone to 267 feet
- clay with siltstone and tuff to 322 feet
- sinter with silicified siltstone to 347 feet
- arkose with minor tuff and clay to 392 feet
- sinter to 417 feet
- arkose, tuff, and sinter to 432 feet
- siltstone, tuff, silicified siltstone, and clay to 520 feet

Traces of silicified siltstone were observed as shallow as 41 feet and were encountered sporadically throughout the rest of the lithology. No water was encountered during the drilling. The borehole was unstable and required re-drilling with the air-rotary rig and a cable-tool rig to keep the bore open for well completion.

2.1.4. Casing and Screen Placement

Prior to placing casing and screen, the bottom of the 10-inch bore drilled into clay from 520 to 499 feet was backfilled with 11 ft^3 of Portland type I/II neat cement grout pumped through a tremie pipe from the bottom up. This volume of cement is approximately 94% the calculated volume of a 21-foot-long 10-inch bore.

The well was completed with a single string of nominal 5-inch diameter flush-joint Schedule 80 PVC casing and screen. The casing was set from approximately 2 feet above ground surface to a depth of 458 feet, with screen (slot size 0.020-inch) set from a depth of 458 to 498 feet. The 5-inch casing was fitted with centralizers every 60 feet to maintain a consistent annular space inside the 10-inch bore.

2.1.5. Filter Pack

Filter pack (No. 8-12 Colorado Silica Sand) was placed in the annular space outside the 5-inch screens and casing, from 455 to 499 feet. A filter pack seal was installed using No. 20-40 Colorado Silica Sand filter pack placed from 453 to 455 feet to prevent cement intrusion into the underlying filter pack during seal placement. All filter pack was washed into place through flush-joint PVC tremie pipe.

2.1.6. Seal Placement

Following installation of the 5-inch PVC casing and screen and filter pack, tremie pipe was set to approximately 450 feet (3 feet above the top of the filter pack seal) and 240 ft^3 of bentonite-cement grout was pressure-grouted into the annulus between the 5-inch PVC casing, the 10-inch bore, and 12-inch surface casing. The seal was placed from a depth of 453 feet to ground surface. The grout volume required was approximately 124% the calculated volume based on the annulus dimensions mentioned above. The bentonite-cement grout consisted of 3.75 pounds of bentonite (Wyo-Ben Groutwell DF) per 94-lb sack of Portland type I/II neat cement with 7.8 gallons of water.

2.1.7. Well Head Assembly

The 12-inch surface casing extends approximately 36 inches above ground level. The surface casing serves as a protective well shelter for the PVC well casing. The surface casing is fitted with a locking cap to secure the well head. The top of the 5-inch PVC casing is approximately 2 feet above ground level and is fitted with a vented, removable sanitary well cap.

The OWRD well tag is permanently affixed to the 12-inch surface casing by means of a stainless-steel band. A concrete pad (3 feet square) was poured around the well head shelter. Three protective bollards were placed around the well shelter.

Photographs of the well head assembly are provided in Attachment C.

2.1.8. As-Built Schematic

The as-built construction for the well is provided as Attachment D.

2.1.9. Well Development

No water was encountered during drilling the well. Airlifting at the bottom of the well while cleaning infill did not produce water other than minor water injected to remove cuttings. No development was deemed necessary.

2.2. Test Pumping and Water Quality

2.2.1. Well Testing

This well was dry after completion so it could not be test pumped. During quarterly water-level monitoring events on September 26, 2017, and November 29, 2017, the well was checked and confirmed to still be dry. During the most recent two quarterly monitoring events, water was detected in the bottom of the well. On March 7, 2018 and June 26, 2018, the water level was measured at 499.30 and 499.35 feet below the measuring point

with a total amount of water in the bottom being approximately 0.70 and 0.75 feet respectively. The presence of water suggests that the formation is saturated but with a very low hydraulic conductivity. This well will continue to be monitored quarterly to detect any changes in water level.

2.2.2. Water Quality

This well was dry after completion so it could not be sampled for water quality. Since March 2018, a minor amount of water has been detected in the bottom of the well. However, the minor amount of water in the well and extremely low aquifer hydraulic conductivity does not make it suitable for sampling.

2.3. Well Construction and Testing Summary

Grassy Mountain Monitoring Well GMW17-31 was constructed in accordance with the approved Plan and State of Oregon monitoring well construction standards (Administrative Rules Chapter 260, Division 240, dated September 6, 2016). The surface seal was installed to a depth of 453 feet, into a layer of tan/gray clay and siltstone above the target aquifer zone. The surface seal as installed is adequate to prevent any surface contamination from reaching the screened interval.

Following construction, the well was dry so no test pumping or water quality sampling occurred. Since March 2018 a minor amount of water has been detected in the bottom of the well, suggesting that the formation is saturated but exhibits a very low hydraulic conductivity.

3. GMW17-33

3.1. Drilling, Construction, and Development

3.1.1. Introduction

Well construction began on November 2, 2017 and was completed on November 30, 2017. The well was constructed using the air-rotary method of drilling by Down Right. The well was constructed under start card number 1036990. The State of Oregon Monitoring Well Report is included in Attachment A.

3.1.2. Surface Casing Installation and Seal

As the first step in the well construction process, a nominal 10-inch borehole was drilled to 118 feet through the overburden (0 to 10 feet), siltstone/claystone and clay (10 to 40 feet), conglomerate, sandstone, and siltstone (40 to 50 feet), tuff and clay with some siltstone, and sandstone (50 to 118 feet). The lithologic log is included in Attachment B. The 10-inch bore was then reamed to a 16-inch bore to 118 feet for installation of a 12-inch surface casing.

A nominal 12-inch diameter mild steel casing with 0.250-wall thickness was installed from approximately 34 inches above ground surface to a depth of 118 feet. The annulus between the 12-inch casing and the 16-inch bore was sealed from 118 feet to ground

surface with 82.8 ft^3 of Portland type I/II neat cement grout pumped through a tremie pipe from the bottom up. This volume of cement is approximately 129% the calculated volume needed for a 118-foot long, 12.5-inch (casing outside diameter) to 16-inch, annulus.

3.1.3. Borehole Drilling

Following installation and sealing of the surface casing, a nominal 12-inch bore was advanced from 118 to 365 feet by air-rotary drilling. Drilling encountered the following lithology as described on the lithologic log in Attachment B.

- clay with tuff and arkose to a depth of 120 feet
- arkose with sinter and tuff to 150 feet
- sandstone and siltstone with arkose to 160 feet
- clay and arkose with some sinter to 170 feet
- sinter with sandstone, arkose and clay to 190 feet
- clay to 210 feet
- arkose with clay to 220 feet
- clay and arkose to 235 feet
- sinter and silicified siltstone with traces of tuff and clay to 290 feet
- clay to 295 feet
- sinter to 300 feet
- silicified siltstone, sinter and tuff with traces of clay to 365 feet

The lithology is weak to moderately silicified from a depth of 235 feet to 365 feet. Water was first encountered at 240 feet. The hole was drilled to the total depth of 365 feet by November 18, 2017. The bore had caved up to 339 feet prior to the casing, screens, and sand being installed.

3.1.4. Casing and Screen Placement

The well was completed with a single string of nominal 5-inch diameter flush-joint Schedule 80 PVC casing and screen. The casing was set from approximately 2 feet above ground surface to a depth of 238 feet, with screen (slot size 0.020-inch) set from a depth of 238 to 338 feet. The 5-inch casing was fitted with centralizers every 60 feet to maintain a consistent annular space inside the 12-inch bore and casing.

3.1.5. Filter Pack

Filter pack (No. 10-20 Colorado Silica Sand) was placed in the annular space outside the 5-inch screen and casing from a depth of 235 to 339 feet. A filter pack seal consisting of No. 20-40 Colorado Silica Sand filter pack was placed from 233 to 235 feet to prevent cement intrusion into the underlying filter pack during seal placement. All filter pack was washed into place through tremie pipe.

3.1.6. Seal Placement

Following installation of the 5-inch PVC casing and screen and filter pack, tremie pipe was set to 233 feet (top of the filter pack seal) and 158.4 ft^3 of a bentonite-cement grout was pressure grouted in the annulus between the 5-inch PVC casing and the 12-inch steel casing and 12-inch bore. The seal was placed from a depth of 233 feet to ground surface.

This grout volume required was approximately 110% of the calculated volume based on the annulus dimensions mentioned above. The bentonite-cement grout consisted of 3.75 pounds of bentonite (Wyo-Ben Groutwell DF) per 94-lb sack of Portland type I/II neat cement with 7.8 gallons of water.

3.1.7. Well Head Assembly

The 12-inch surface casing extends approximately 3 feet above ground level. The surface casing serves as a protective well shelter for the PVC well casing. The surface casing is fitted with a locking cap to secure the well head. The top of the 5-inch PVC casing is approximately 2 feet above ground level and is fitted with a vented, removable sanitary well cap.

The OWRD well tag is permanently affixed to the 12-inch surface casing by means of a stainless-steel band. A concrete pad (3 feet square) was poured around the well head shelter. Three protective bollards were placed around the well shelter.

Photographs of the well head assembly are provided in Attachment C.

3.1.8. As-Built Schematic

The as-built construction schematic for the well is provided as Attachment D.

3.1.9. Well Development

After completion, Well GMW17-33 was bailed for 7 hours with a 3-inch bailer then development pumped at approximately 30 to 40 gpm for 2 hours. Development pumping ended on December 8, 2017, at 17:31. The well produced some fine sand and silts during development. At the end of development, the well was not producing sediment and the water was clear.

3.2. Test Pumping and Water Quality

3.2.1. Well Testing

Monitoring Well GMW17-33 was tested on December 14, 2017 using a 5 hp A.Y. McDonald Mfg. Co. 24500R 35-gpm submersible pump. The pump was supplied by Down Right Drilling and set on 2-inch drop pipe at a depth of approximately 340 feet below the measuring point, 1 foot from the bottom of the well and 102 feet below the top of the screen interval. A 1.25-inch PVC sounding tube was installed to the top of the pump. After installation the pump was operated for 2 hours to assess operation and confirm proper development.

Prior to testing, a water-level pressure transducer was installed in the well to automatically record water levels at one-minute intervals. The pressure data was corrected for barometric pressure. The test pumping was supervised by Kurt Newbry, P.G. from SPF. Manual water-level measurements were made by Kurt Newbry and Down Right using a non-stretch well sounder. Flow was measured and totalized with a 4-inch Siemens Mag flow meter and confirmed throughout testing with a 5-gallon bucket and stopwatch.

During the test, the water level was measured relative to the top of the 1.25-inch sounding tube which was 1.06 feet above the top of the 5-inch PVC casing. All reported water levels

have been corrected to reference the long-term measuring point of the top of the 5-inch PVC casing (approximately 2 feet above ground level).

Test pumping of the well began on December 14, 2017, at 14:00, or about 20.5 hours after development pumping ended. The static water level prior to testing was 243.07 feet below the measuring point which was less than one foot deeper than the static water level measured prior to pumping the day before. The initial constant pumping rate was approximately 30 gpm. The first 3,220 minutes (53.7 hours) of the test showed sustainable drawdown with minor negative and positive boundary effects or possible delayed yield effects. After 3,220 minutes, a major negative boundary effect was observed. To avoid the pump breaking suction, as well as an attempt to prolong the test, the flow rate was then decreased to 27 gpm at 3,465 minutes, 25 gpm at 3,575 minutes, 20 gpm at 4,050 minutes, and 17.5 gpm at 4,678 minutes. The pump was eventually turned off at 5,820 minutes (97 hours) with the end pumping rate at 17.2 gpm and an average pumping rate of 25.8 gpm over the pumping period. The total drawdown in the well at the end of the pumping period was approximately 46 feet, but the maximum drawdown reached was around 91 feet at the 27-, 25-, and 20-gpm pumping rates.

An arithmetic time series plot showing brief operation of pump for testing and well development, test pumping, and recovery until December 20, 2017, is presented as Figure 2. The short recovery period is displayed to show pumping water level changes more clearly. Test pumping data are provided as Attachment E.

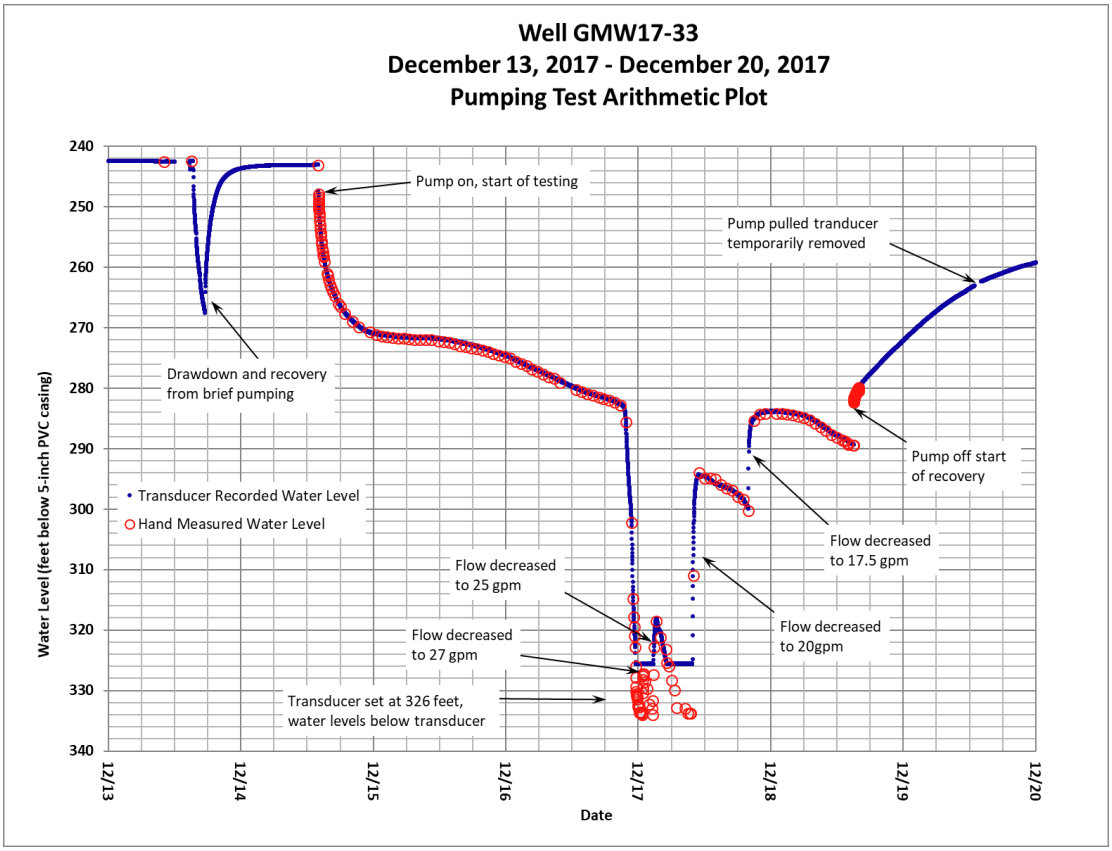


Figure 2. GMW17-33 pumping test arithmetic plot

An additional arithmetic time series plot showing longer pre-testing and post-testing water levels is provided as Figure 3.

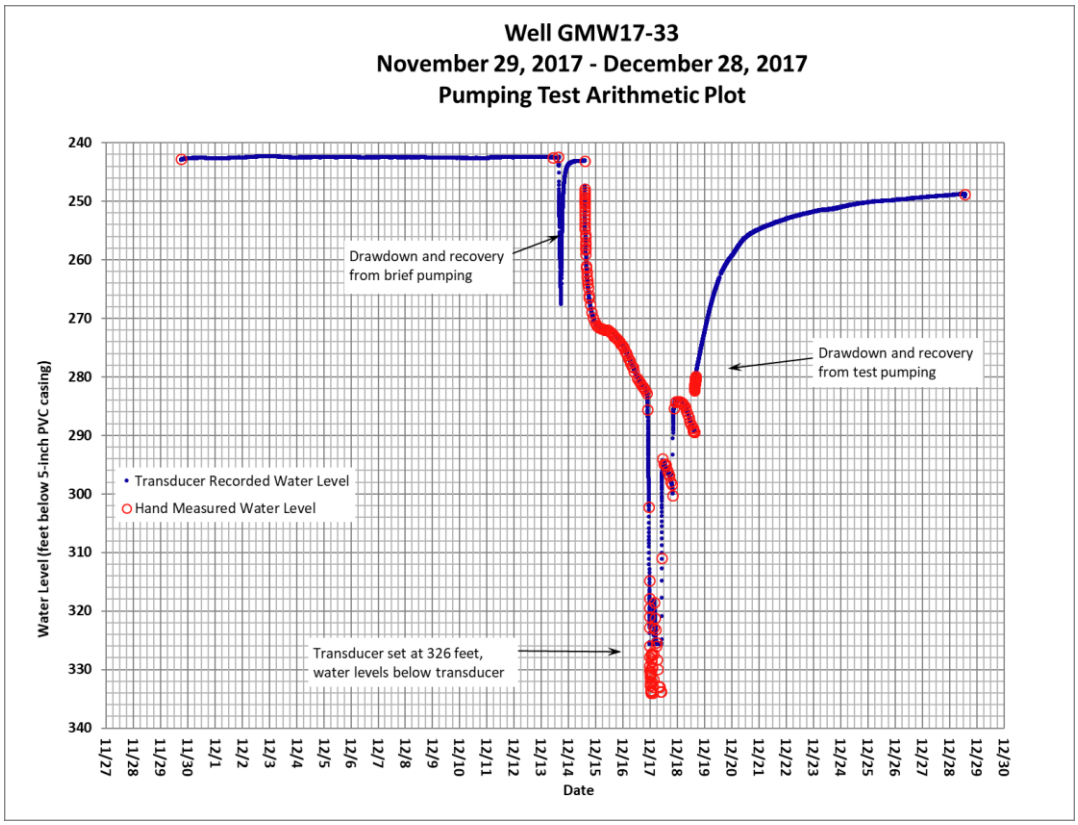


Figure 3. GMW17-33 pumping test arithmetic plot with a longer timespan

3.2.2. Aquifer Characteristics

3.2.2.1. Aquifer Transmisivity

A semi-log plot of the drawdown data is presented below as Figure 4. Transmissivity was estimated using Cooper-Jacob straight line methods on a semi-log plot of drawdown versus elapsed time for the pumping portion of the aquifer test. The transmissivity obtained from a match to the early-time data using an average pumping rate of 25.8 gpm was approximately 500 gpd/ft (70 ft^2/d). Approximately 500 minutes into the pumping test, the drawdown appeared to stabilize for about 1 day, possibly attributed to delayed yield effects, followed by a negative boundary effect after approximately 3,200 minutes of pumping. Assuming an aquifer thickness of 200 feet, the estimated hydraulic conductivity near the well would be approximately 0.4 ft/d (encountered within one day of pumping). If only the screened interval contributed flow to the well with a saturated thickness of 97 feet, the estimated hydraulic conductivity would be approximately 0.7 ft/d. The hydraulic conductivity encountered at the negative boundary would be significantly less based on increased and unsustainable drawdown effects.

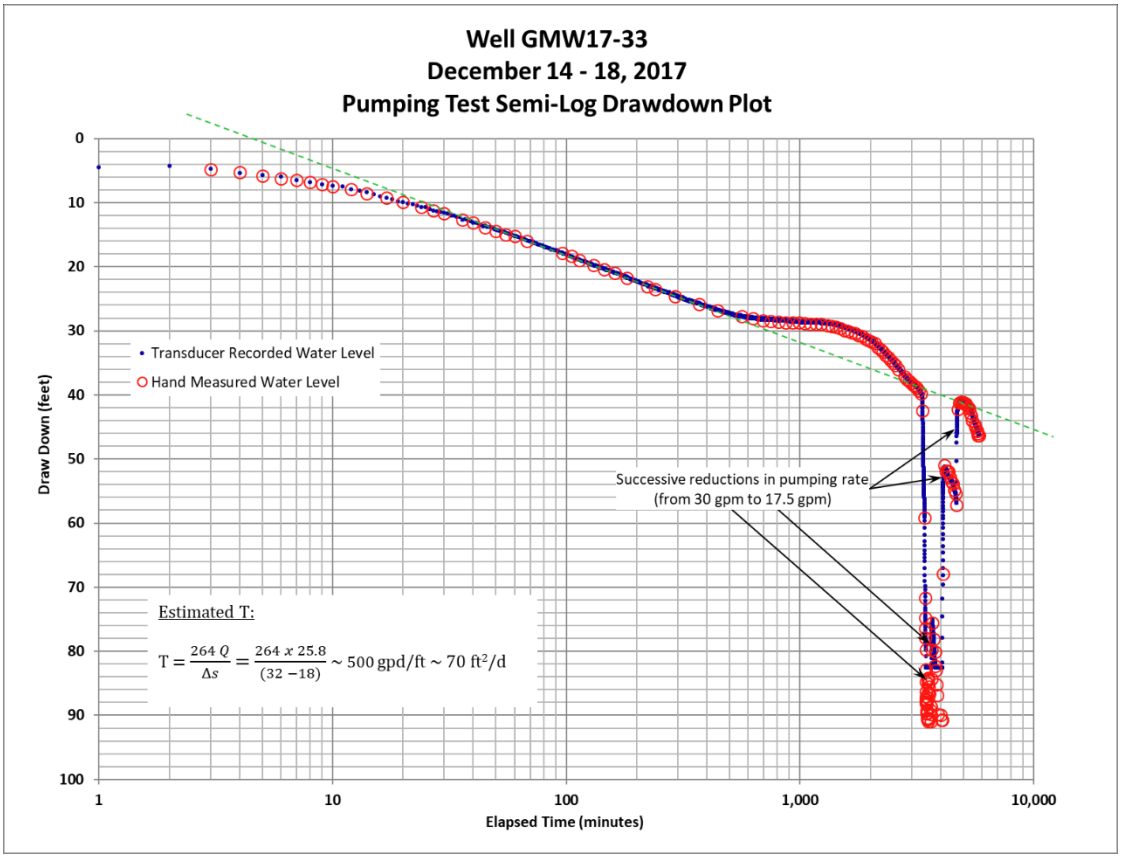


Figure 4. Well GMW17-33 aquifer test pumping drawdown analysis

A semi-log plot of the recovery data collected following the test pumping until March 7, 2018 is presented below as Figure 5. Using the recovery data and an average pumping rate of 25.8 gpm, an aquifer transmissivity of approximately 6,800 gpd/ft (900 ft^2/day) was estimated using the early time data and an aquifer transmissivity of approximately 340 gpd/ft (50 ft^2/day) was estimated using the late time data. Assuming only the screened interval contributed flow to the well with a saturated thickness of 97 feet, the assumed hydraulic conductivity would be 10 ft/d near the well, and 1 ft/d at the boundary. This response suggests compartmentalization of the aquifer, with higher versus lower permeability zones,

Quarterly monitoring of the of GMW17-33 showed the water level was still recovering on March 7, 2018, with a water level of 246.21 feet below the measuring point (approximately 3.14 feet of residual drawdown from the pre-test static water level). On June 26, 2018, this water level was measured at 249.38 feet below the measuring point, a 3.17-foot drop in water level since the last quarterly measurement. Water levels in this well will continue to be monitored on a quarterly basis.

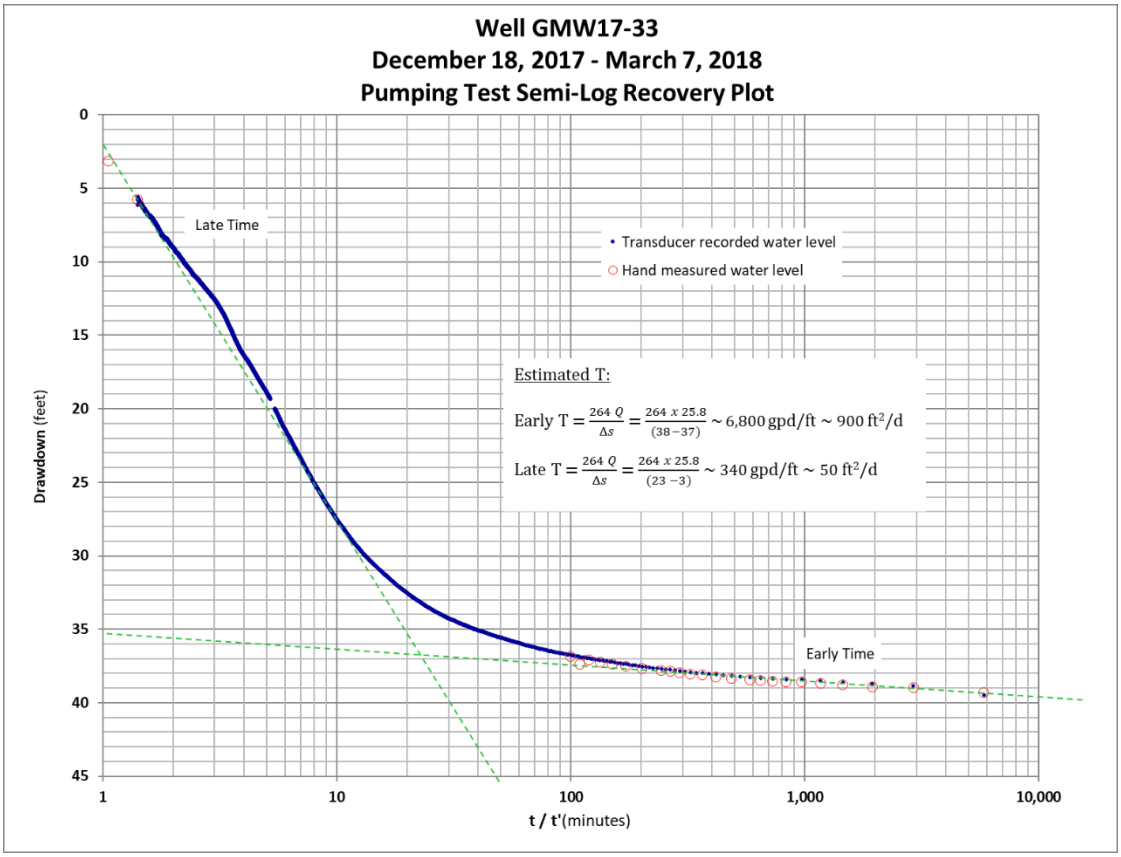


Figure 5. Well GMW17-33 aquifer test recovery analysis

3.2.2.2. Response in Nearby Wells

During the testing of GMW17-33, water levels were measured in nearby wells using water level transducers and manual measurements with a non-stretch well sounder. Pressure transducers were installed in wells 59762, GMW17-32 (deep pair to GMW17-33), GW-3, 26-92-915, BLM, PW-1, GW-1, 57-10, 59761, 59772, GW-2, and GW-4. The water level plots show that there was no measurable response observed in any of the wells as a result of testing GMW17-33. In return, during the testing of GMW17-32 and 59762, there was no water level response in in GMW17-33. Plots showing the water levels in each of the monitoring wells are provided in Attachment E.

3.2.3. Water Quality

3.2.3.1. Field Water Quality

Field water quality data were collected from the start of the test until water quality sampling. Results are summarized in Table 1 below. The pH measured throughout the test pumping is unusually low, with a value of 6.95 measured right before sample collection. The laboratory reported a pH of 8.1, more than one standard unit higher than the pH measured in the field. A pH of around 8 is expected based on the nearby wells. The field pH unit appears to have been in error, despite recent calibration of the pH meter. The conductivity values are lower than expected with a value of 268 µS/cm measured right before sample collection. The laboratory reported a conductivity of 477 µS/cm. The field conductivity meter also appears to have been reporting erroneous values. It was very cold on the day of sampling and that may have affected the field water quality measurements. A Grassy Mountain groundwater monitoring sampling form is provided in Attachment F.

Table 1. GMW17-33 field water quality data

Time	pH (S.U.)	EC (µS/cm)	SC (µS/cm @ 25°C)	Temp. (°C)	DO (mg/L)	Notes
14:00						pump on
14:27	6.46	319	388	15.7	2.75	clear, medium degassing, no odor, no sand
14:45	6.78	315	383	15.7	2.35	
15:08	6.88	312	379	15.7	2.17	
17:04	6.95	278	338	15.7	1.66	
17:42	6.95	274	333	15.6	1.7	
18:00	6.95	268	327	15.7	1.68	clear, medium degassing, no odor, no sand

3.2.3.2. Laboratory Water Quality

Water quality samples were collected by Kurt Newbry with SPF after 4 hours of pumping at 30 gpm on December 14, 2017 at 18:00. Samples were collected from a sample tap in the discharge piping while pumping at approximately 30 gpm. The water was clear, showed signs of degassing, had no apparent odor, and no sand. Water quality sampling procedures and quality assurance/quality control were conducted per the Environmental Baseline Study Work Plans (Work Plans) for the Grassy Mountain Project dated May 17, 2017.

A total of 7,200 gallons was pumped from the well prior to sampling, equal to more than 70 casing volumes of water. Samples were collected for the water quality analytes listed in Table 15 of Section 3.4.4.2.11 of the Work Plans, as amended to include uranium,

replace nitrate and nitrite sampling with combined nitrate+nitrite, and remove inorganic arsenic. The samples were shipped to ACZ Laboratories (ACZ) in Steamboat Springs, Colorado on December 15, 2017. The samples were received by ACZ at a temperature of 2.5°C, below the upper limit of 6°C. The field form and laboratory report are provided in Attachment F.

3.2.3.3. Water Quality Comparison to Drinking Water Standards

Water quality analytical results were compared to Environmental Protection Agency (EPA) primary and secondary drinking water standards. Primary drinking water standards are legally enforceable standards meant to protect public health. The enforceable standards are referred to as maximum contaminant levels (MCLs). Secondary drinking water standards are non-enforceable water quality standards meant to address aesthetic concerns with drinking water, including taste, color, and odor. Secondary standards do not present a public health risk.

The water quality parameters from GMW17-33 exceeding primary or secondary drinking water standards are summarized in Table 2. A total of two analytes exceed their respective MCL; both the total and dissolved concentrations of antimony and arsenic exceeded the MCL.

Primary drinking water analytes over the minimal detection limit include barium at 0.008 mg/L, beryllium at 0.00007 mg/L, copper at 0.0005 mg/L, lead at 0.002 mg/L, mercury at 11.5 ng/L, selenium at 0.0106 mg/L, uranium at 0.0007 mg/L, and nitrate+nitrite at 1.46 mg/L. Nitrate+nitrite, which does not have an MCL, was used as a substitute for nitrate and nitrite in this study. The MCL values for nitrate and nitrite are 10 mg/L and 1 mg/L respectively.

Table 2. GMW17-33 water quality results exceeding drinking water standards

Parameter	**MCL (mg/L)**	**12-11-17 Sample Result (mg/L)[1]**
Antimony, dissolved	0.006	0.0217
Antimony, total	0.006	0.0244
Arsenic, dissolved	0.01	0.106
Arsenic, total	0.01	0.107

3.2.3.4. Major Ion Chemistry

Geochemical characteristics of the groundwater from GMW17-33 were evaluated using Piper diagrams (also known as Trilinear diagrams) and Stiff diagrams, with major ions expressed as meq/L. These diagrams are useful for evaluating the geochemical signature of the water, to illustrate general differences in water chemistry using major ions, and to group waters with similar chemical signature into identifiable groups.

The Stiff diagram for GMW17-33 is presented as Figure 6. The Stiff diagram identifies the groundwater as having a sodium-potassium sulfate (Na/K-SO4) water quality signature with bicarbonate almost as prominent as sulfate. For comparison, the nearby deep well 59762 has the same signature.

The Piper diagram for the groundwater quality data from GMW17-33 and the 3rd Quarter 2014 data from all other wells is presented as Figure 7. The Piper diagram also shows a sodium-potassium sulfate (Na/K-SO4) water quality signature for GMW17-33.

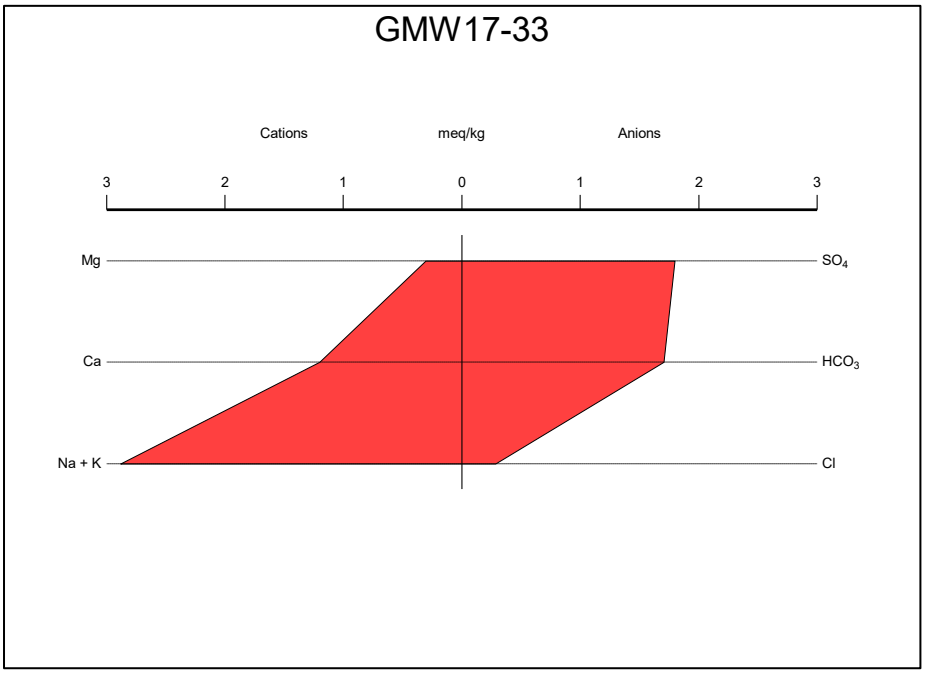


Figure 6. Stiff diagram for GMW17-33

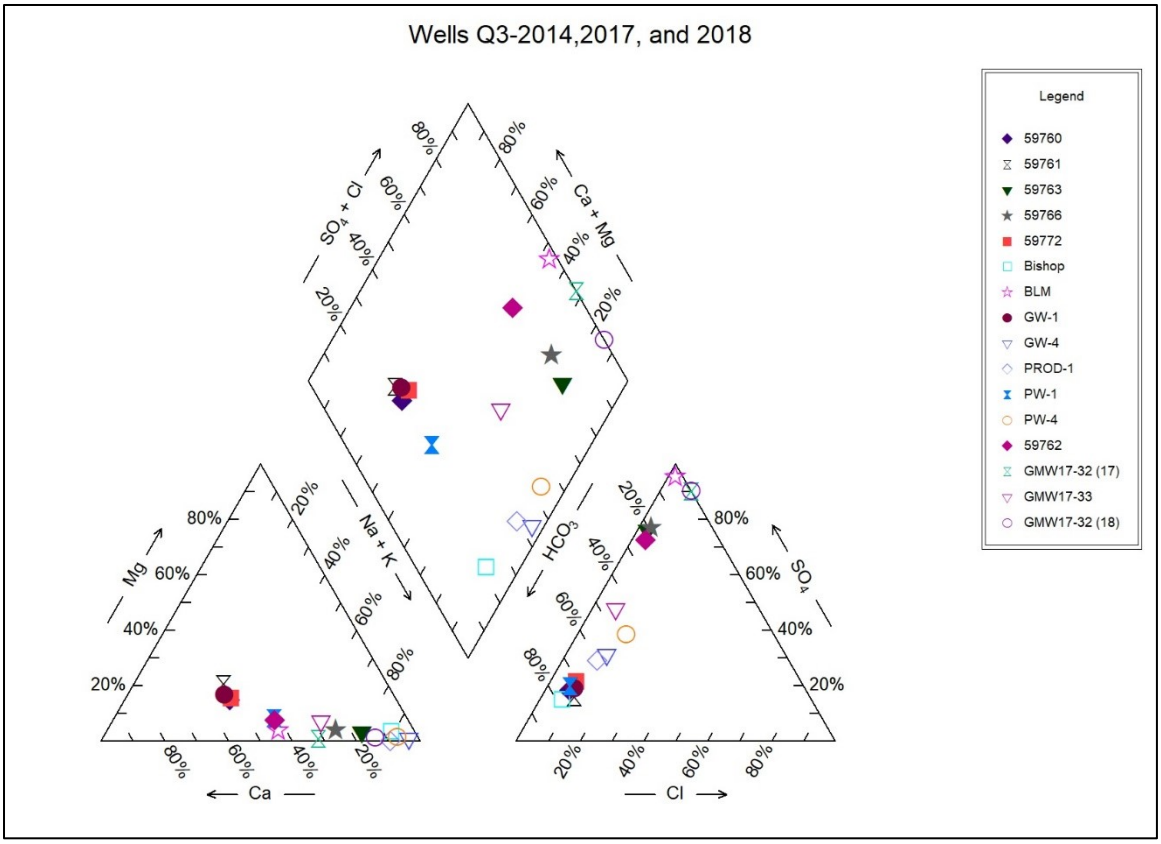


Figure 7. Piper diagram for GMW17-33

3.3. Well Construction and Testing Summary

Grassy Mountain Monitoring Well GMW17-33 was constructed in accordance with the approved Plan and State of Oregon monitoring well construction standards (Administrative Rules Chapter 260, Division 240, dated September 6, 2016). The surface seal was installed to a depth of 233 feet, below multiple layers of clay and siltstone above the target aquifer. The surface seal as installed is adequate to prevent any surface contamination from reaching the aquifer.

Upon initial testing the well produced 30 gpm. After approximately 3,200 minutes a negative boundary affect was observed and the water level declined significantly with an increase of the drawdown per log cycle to over 100 times the early time water level drawdown. The pumping rate was decreased to 27, 25, 20.5, and 17.5 gpm in an attempt to obtain a steady drawdown without the water level drawing down to the pump intake. During the flow decreases the water level would recover, but then continue to drop to unsustainable drawdown conditions. It seems that once the local bounded aquifer was drained, the recharge was significantly impeded by hydraulic boundaries (structural disconformities and/or very low permeability strata).

The groundwater sampling results show this well having a sodium-potassium sulfate (Na/K-SO4) water quality signature with bicarbonate measuring in almost as prominent as sulfate. Two water quality analytes from GMW17-33 exceed the primary drinking water

standards. Antimony (total) was detected at 0.0244 mg/L (MCL = 0.006 mg/L) and arsenic (total) was detected and 0.107 mg/L (MCL = 0.01 mg/L).

4. GMW18-34

4.1. Well Drilling and Construction

4.1.1. Introduction

Well construction began on April 17, 2018, and was completed on June 21, 2018. The well was constructed using the air-rotary method of drilling by Down Right. The well was constructed under start card number 1038395. The State of Oregon Supply Well Report is included in Attachment A.

4.1.2. Surface Casing Installation and Seal

As the first step in the well construction process, a nominal 10-inch borehole was drilled to 200 feet through the surface overburden with arkose (0 to 5 feet), silicified arkose (5 to 20), tuffaceous siltstone (20 to 35 feet), tuff (35 to 45 feet), arkose (45 to 70 feet), tuff (70 to 75 feet), clay and arkose (75 to 135 feet), tuff and clay (135 to 175 feet), and sinter and arkose (175 to 200 feet). The lithologic log is included in Attachment B. The 10-inch bore was then reamed to a 16-inch bore from the surface to 200 feet for installation of a 12-inch casing.

A nominal 12-inch diameter mild steel casing with 0.375-inch wall thickness was installed and an under-reaming bit was used to advance the casing to 355 feet. The top 58 feet of the 12-inch diameter mild steel casing is 0.250-inch wall thickness. The under-reaming bit was able to drill a 14-inch bore to advance the 12-inch diameter casing. The borehole was drilled from 200 to 355 feet through arkose and tuff (200 to 230 feet), and sinter with traces of clay, tuff, and silicified siltstone (230 to 355 feet).

The 12-inch casing was sealed into place from approximately 3 feet above ground surface to a depth of 355 feet. The annulus between the 12.75-inch (O.D.) casing and the 14-inch bore was sealed from 355 to approximately 200 feet with 32 ft^3 of Portland type I/II neat cement grout. The cement grout was pumped into the bottom of the 12-inch casing then was pushed down and out of the casing and up the annulus using a “dart”. The installed volume of 32 ft^3 is 115% of the calculated volume needed for a 155-foot-long, 12.75-inch to 14-inch annulus.

After sealing the 12-inch casing from the bottom up, a tremie pipe was installed in the 12.75-inch to 16-inch annulus to 199 feet and 84 ft^3 of Portland type I/II neat cement grout was pumped into the annulus. After pumping in this cement, attempts to tag the top of the cement showed it did not come up above 199 feet. It is believed that this cement flowed out fractures in the unsaturated media.

The 12.5-inch and 12.75-inch to 16-inch annulus was then sealed from 199 to 8 feet with 98.7 ft^3 of bentonite chips poured in from the top. The volume of bentonite chip used to

seal this annulus is 100% of the calculated volume for a 144-foot-long, 12.75-inch to 16-inch annulus and 47-foot-long, 12.5-inch to 16-inch annulus.

The top 8 feet of the 12.5-inch to 16-inch annulus was sealed with 9.6 ft^3 of Portland type I/II neat cement grout. This volume is 221% the calculated volume for this annulus, suggesting loss to the formation.

4.1.3. 10-inch Under-Reaming, 12-inch Bore Drilling

Following installation and sealing of the surface casing, a 12-inch open borehole was drilled to 671 feet. Drilling encountered the following lithology as described on the lithologic log in Attachment B:

- siltstone and clay from a depth of 355 to 360 feet
- siltstone and sinter to 380 feet
- clay with sinter and siltstone to 420 feet
- arkose with silicified siltstone to 450 feet
- silicified siltstone and sandstone with arkose to 455 feet
- sinter with siltstone to 465 feet
- arkose with siltstone to 505 feet
- clay and siltstone to 525 feet
- sinter with traces of siltstone, tuff, arkose to 600 feet
- clay siltstone and arkose to 615 feet
- siltstone and arkose to 625 feet
- sinter to 640 feet
- sinter and siltstone to 655 feet
- arkose and siltstone to 671 feet

There was no indication of water during drilling to 671 feet. After drilling 12-inch open hole to 671 feet, the next day the hole had caved up to 630 feet. A nominal 10-inch diameter mild steel casing with 0.250-inch wall thickness was then installed to a depth of 658 feet. The hole was cleaned out to 671 feet. Air-lifting occurred to determine if there was any water present. Starting at a depth of 520 feet, the drill steel was lowered in 20-foot increments, then air-lifting occurred for 15 minutes to detect the presence of water. No water was observed during this process. A bailer was then lowered to the bottom of the hole and no water was bailed from the well.

After it was confirmed no shallow water was present, the 10-inch casing was advanced to 790 feet using a 10-inch under-reaming bit. Drilling during the 10-inch under-reaming encountered the following lithology as described on the lithologic log in attachment B:

- arkose and siltstone from 671 to 705 feet
- silicified siltstone, tuff and sandstone to 730 feet
- tuff with sandstone and siltstone to 745 feet
- arkose and silicified siltstone to 790 feet

No water was encountered during the drilling. The 10-inch casing was then sealed from a depth of 790 feet to ground surface with 148.8 ft^3 of Portland type I/II neat cement grout. This volume is 102% the calculated volume for 790 feet of a 10.5-inch to 12-inch annulus.

4.1.4. 10-inch Borehole Drilling

After the 10-inch casing was sealed, a nominal 10-inch diameter bore was drilled from 790 feet to 950 feet by air-rotary drilling. Drilling encountered the following lithology as described on the lithologic log in Attachment B:

- siltstone and arkose from 790 to 800 feet
- sandstone and siltstone and tuffaceous siltstone to 865 feet
- siltstone and tuffaceous siltstone to 885 feet
- silicified sandstone and siltstone to 895 feet
- clay to 900 feet
- tuff with sandstone and siltstone to 915 feet
- tuff to 950 feet

The lithology is moderately to highly silicified from a depth of 200 feet to 920 feet. The drilling was typically difficult, with layers of swelling clay, hard rock, and fractured pockets where circulation was lost. No water was encountered during drilling.

4.1.5. Casing and Screen Placement

Prior to placing casing and screen, the bottom 58 feet of the 10-inch bore drilled into clay was backfilled with bentonite chips. The well was completed with a single string of nominal 5-inch diameter Schedule 40 stainless steel casing and screen. The casing was set from approximately 2 feet above ground surface to a depth of 830 feet, with screen (slot size 0.030-inch) set from a depth of 830 to 890 feet. The 5-inch casing was fitted with centralizers every 60 feet to maintain a consistent annular space inside the 10-inch bore.

4.1.6. Filter Pack

Filter pack (No. 8-12 Colorado Silica Sand) was placed in the annular space outside the 5-inch screens and casing, from 828 to 892 feet. A filter pack seal using No. 16-30 Colorado Silica Sand filter pack was placed from 826 to 828 feet to prevent cement intrusion into the underlying filter pack during seal placement. All filter pack was washed into place through flush-joint PVC tremie pipe.

4.1.7. Seal Placement

Following installation of the 5-inch PVC casing and screen and filter pack, tremie pipe was set to approximately 826 feet (top of the filter pack seal) and 355.2 ft^3 of Portland type I/II neat cement grout was pressure-grouted into the annulus between the 5-inch PVC casing, the 10-inch bore, and 10-inch casing. The seal was placed from a depth of 826 feet to surface. The grout volume required was approximately 115% the calculated volume based on the annulus dimensions mentioned above.

4.1.8. Well Head Assembly

The 12-inch surface casing extends approximately 36 inches above ground level. The surface casing serves as a protective well shelter for the PVC well casing. The surface casing is fitted with a locking cap to secure the well head. The top of the 5-inch stainless-steel casing is approximately 2 feet above ground level and is fitted with a vented, removable sanitary well cap.

The OWRD well tag is permanently affixed to the 12-inch surface casing by means of a stainless-steel band. A concrete pad (3 feet square) was poured around the well head shelter. Three protective bollards were placed around the well shelter.

Photographs of the well head assembly are provided in Attachment C.

4.1.9. As-Built Schematic

The as-built construction for the well is provided as Attachment D.

4.1.10. Well Development

During drilling the well did not produce water. Airlifting at the bottom of the well while removing infill did not produce water other than minor water injected to remove cuttings. No development was deemed necessary.

4.2. Test Pumping and Water Quality

4.2.1. Well Testing

This well was dry after completion so test pumping was not possible. The well was checked again on June 26, 2018, during quarterly water-level monitoring. A non-stretch well sounder was ran to the bottom of the well and no water was detected. This well will continue to be monitored quarterly to determine if water eventually seeps in the bottom.

4.2.2. Water Quality

This well was dry after completion so it could not be sampled for water quality.

4.3. Well Construction and Testing Summary

Grassy Mountain Monitoring Well GMW17-31 was constructed in accordance with the approved Plan and State of Oregon well construction standards (Administrative Rules Chapter 260, Division 200, dated September 6, 2016). The surface seal was installed to a depth of 355 feet, into a layer of siltstone and clay. The surface seal as installed is adequate to prevent any surface contamination from reaching the aquifer.

Following construction, the well was dry so no test pumping or water quality sampling occurred.

5. SUMMARY

Four groundwater monitoring wells were installed at the Grassy Mountain project site in 2017 and 2018. This report provides details for two downgradient shallow wells (GMW17-31 and GMW17-33) and one upgradient deep well (GMW18-34). A downgradient deep well (GMW17-32) is detailed in a previous report by SPF dated August 20, 2018.

Well GMW17-31 was constructed to a depth of 498 feet. The well was dry upon completion in August 2017, but monitoring in 2018 has shown an accumulated total of slightly less than 1 foot of water in the bottom of the well. The inflow of water into the well is insufficient for test pumping or water quality sampling.

Well GMW17-33 was constructed to a depth of 338 feet. The well produced up to 40 gpm during development pumping. Test pumping was initiated at 30 gpm, but the rate could not be sustained due to apparent dewatering of the compartmentalized aquifer tapped by the well. Water quality samples were obtained from the well for laboratory analysis. The groundwater from this well has a sodium-potassium sulfate (Na/K-SO4) water quality signature. The concentrations of arsenic and antimony exceed the primary drinking water standards.

Well GMW18-34 was constructed to a depth of 890 feet. The well was dry upon completion in June 2018.

An upgradient shallow well was originally proposed. However drilling of the deep upgradient well did not find evidence of a shallow aquifer. The TRT subsequently approved a Work Plan Adjustment not requiring the upgradient shallow well.

Attachment A
State of Oregon Well Reports

MALH 54404

GMW17-31 **MALH 54404**

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125168

START CARD # 1035606

(1) LAND OWNER

Owner Well I.D. GMW-17-31

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

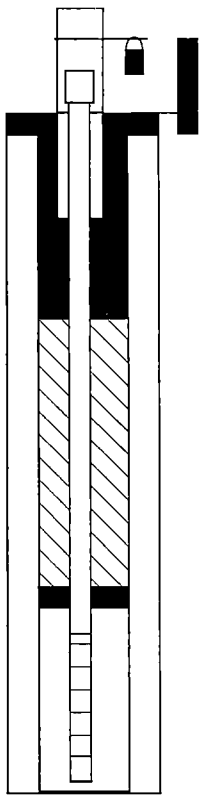
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 498.00 ft. Special Standard ☐



MONUMENT/VAULT Above Ground

From _____ To _____

BORE HOLE

Diameter 16 From 0 To 98

CASING

Dia. 12 From ☒ 3 To 98

Gauge .250 Wld Thrd

Material ◉ Steel ○ Plastic ☒ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ○ Steel ○ Plastic ☐ ☐

SEAL

From 0 To 38

Material Bentonite Chips

Amount 36 Sacks Grout weight _____

SCREEN

Casing/Liner Casing Material PVC

Diameter 5 From 458 To 498

Slot Size 0.020

FILTER

From 453 To 455 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

○ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Temperature _____ °F Lab analysis ☐ Yes By _____

DEC 21 2017

Supervising Geologist/Engineer SPF Water Engineering

SALEM, OR

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM

Sec 8 SE 1/4 of the NW 1/4 Tax Lot 100

Tax Map Number _____ Lot _____

Lat ° ' " or 43.67387000 DMS or DD

Long ° ' " or -117.35963000 DMS or DD

○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening				
Completed Well				

Flowing Artesian? ☐ Dry Hole? ☒

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Ground Elevation 3711.00

Material	From	To
soft brown clay-top soil	0	3
brown decomposed sand & gravel	3	8
soft light brown sandstone	8	17
hard green sandstone	17	22
med. hard green sandstone	22	28
hard green sandstone	28	41
soft orange sandstone	41	47
soft red sandstone	47	55
sticky red clay	55	60
soft red clay some white clay strips	60	82
hard dark red strips of claystone	82	107
soft red & white clay	107	122
soft tan & red clay	122	142
med. hard red claystone	142	147
hard grey sandstone	147	157
med. hard orange, tan & red claystone	157	177
hard red yellow claystone	177	197
soft red clay	197	202
broken black basalt	202	212

Date Started 8/1/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017

Password : (if filing electronically) _____

Signed TONY HACKETT (E-filed) Tony Hackett

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017

Password : (if filing electronically) _____

Signed SAM P KINGREY (E-filed) Sam Kingrey

Contact Info (optional) _____

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

GMW17-31

MALH 54404

MALH 54404

MONITORING WELL REPORT - continuation page

WELL I.D. LABEL# L 125168

START CARD # 1035606

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
10	98	520

FILTER PACK

From	To	Material	Size
455	499	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	453	200	S	14.1
Cement	38	98	41	S	15.6
Cement	499	520	9	S	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		5	X	2	458	sch80		●		X

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
med. hard multicolored sandstone	212	217
soft yellow orange grey clay	217	242
hard layers sandstone grey	242	258
soft tan clay	258	269
strips of grey clay & grey sandstone	269	309
hard brown glassy rock	309	319
soft tan & grey clay	319	336
hard brown glassy rock	336	337
soft tan clay	337	342
hard fractured brown rock	342	351
hard layers brown sandstone w/clay strip	351	385
hard brown rock	385	397
hard int. lyrs sndstne/clay in 1' strips	397	446
brown clay	446	454
hard brown sandstone	454	456
soft brown clay	456	459
hard layers brown sandstone	459	465
brown clay	465	481
hard sandstone brown	481	498
sticky brown clay	498	520

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DEC 21 2017

SALEM, OR

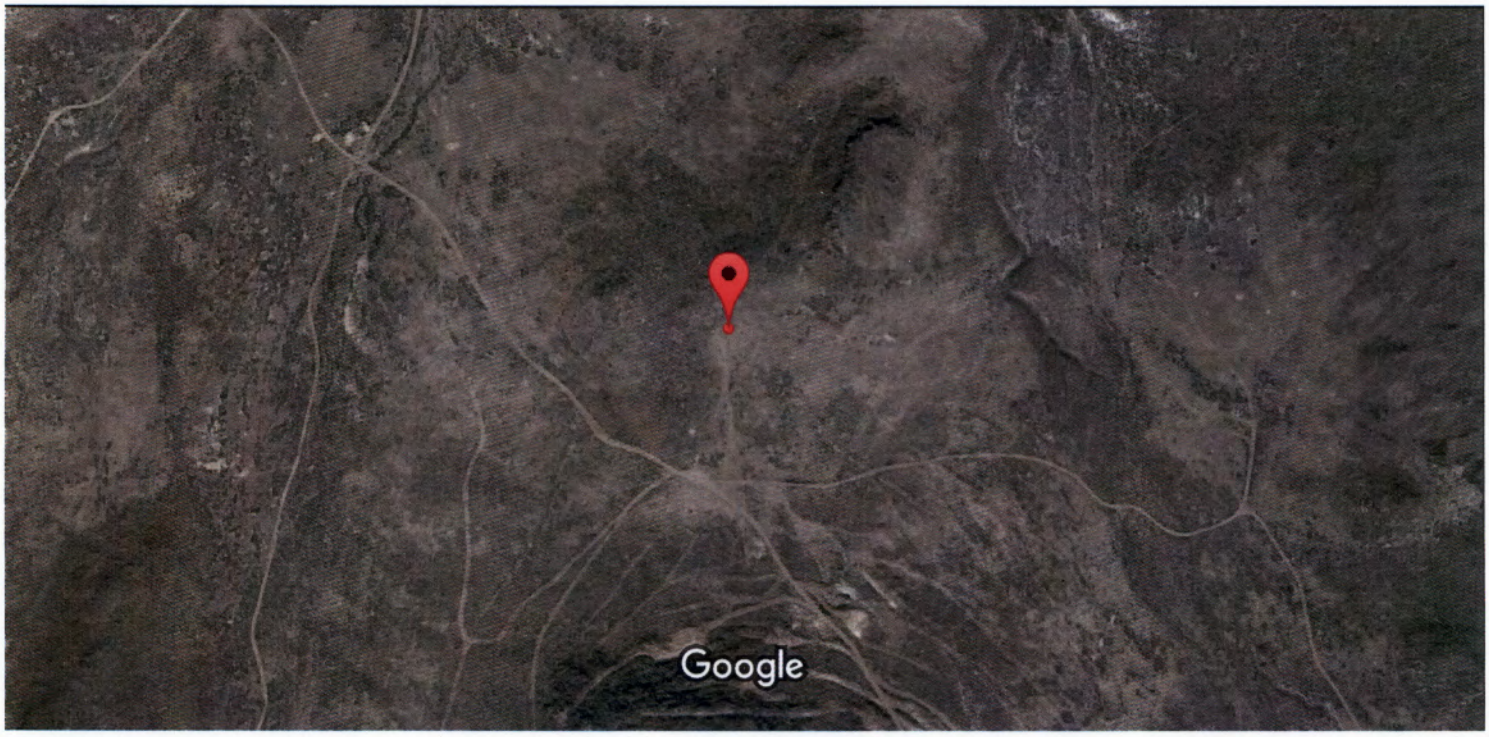
Comments/Remarks

additional drillers 1)Jake Kingrey

2)David Dutcher

Google Maps 43°40'25.9"N 117°21'34.7"W

GMW 17-31 SC 1035606



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DEC 21 2017

SALEM, OR

MALH 54406

GMW17-33

MALH 54406

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125170

START CARD # 1036990

(1) LAND OWNER

Owner Well I.D. GMW-17-33

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP

Address P O BO Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

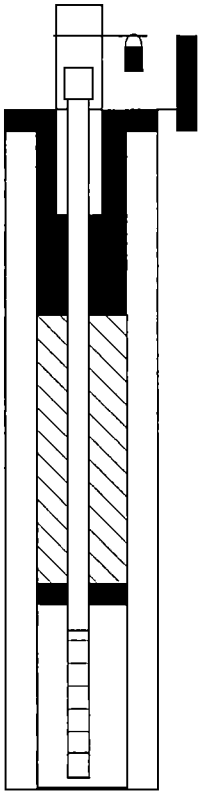
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 340.00 ft. Special Standard ☐



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 118

CASING
Dia. 12 From ☒ 3 To 118
Gauge .250 Wld Thrd
Material ◉ Steel ○ Plastic ☒ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ○ Steel ○ Plastic ☐ ☐

SEAL
From 0 To 118
Material Cement
Amount 69 Sacks Grout weight 15.6

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 238 To 338
Slot Size 0.020

FILTER
From 233 To 235 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

◉ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		340	1
40	28	335	2

Temperature 60 °F Lab analysis ☐ Yes

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Supervising Geologist/Engineer SPF Engineering

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

DEC 21 2017

SALEM, OR

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67235700 DMS or DD
Long ° ' " or -117.36162400 DMS or DD
◉ Street address of well ○ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/28/2017		243

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES — Depth water was first found 251.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
11/28/2017	243	338	20		243

(8) WELL LOG

Ground Elevation _____

Material	From	To
brown clay boulders	0	16
brown clay & rock fragments	16	23
redish sandstone, clay strips	23	30
green claystone	30	35
green & red sandstone	35	46
tan & red claystone	46	73
white,yellow & red clay	73	92
tan claystone	92	98
tan clay layers with rock	98	110
bown & red sandstone	110	120
red, white & brown very hard clay	120	172
red clay with brown strips soft	172	185
red clay, bounces on rock	185	200
brown sandstone	200	212
brown clay strips, sandstone	212	220
brown clay	220	225
brown & grey clay	225	230
brown sandstone	230	245
brown clay	245	251

Date Started 11/2/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically)
Signed TONY HACKETT (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically)
Signed SAM P KINGREY (E-filed)
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

GMW17-33

MALH 54406

MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L125170

START CARD # 1036990

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	365

FILTER PACK

From	To	Material	Size
235	339	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	233	132	S	14.1

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	5	☒	2	238	sch80	○	◉		☒

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
fractured black rock	251	290
grey clay	290	295
black, brown fractured rock	295	314
grey clay strips with black rock	314	320
grey clay	320	327
black, grey rock fractured	327	338
brown clay	338	365

RECEIVED BY OWRD

DEC 21 2017

SALEM, OR

Comments/Remarks

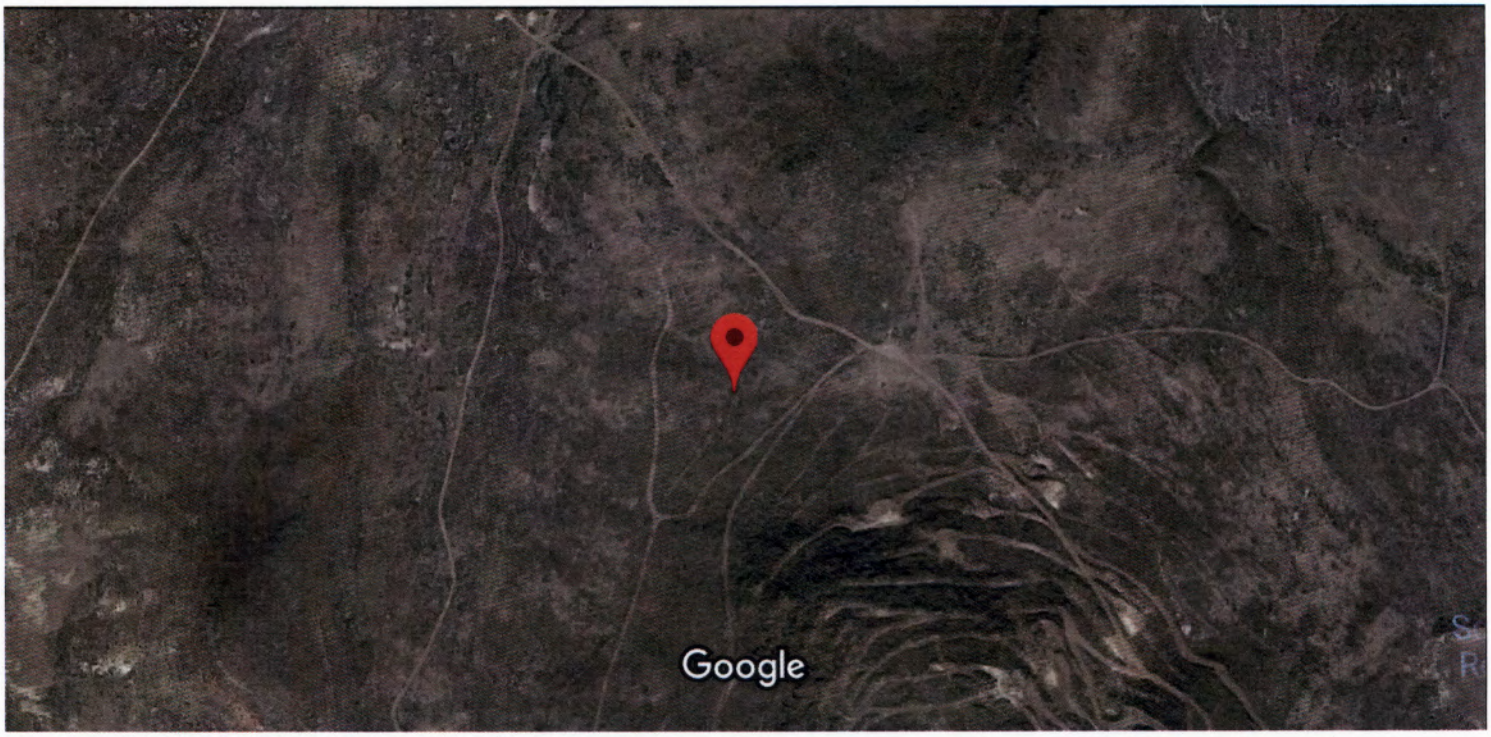
Jake Kingrey

David Dutcher

MALH 54406

Google Maps 43°40'20.5"N 117°21'41.9"W

GMW 17-33 SC 1036990



Imagery ©2017 Google, Map data ©2017 Google 500 ft

RECEIVED BY OWRD

DEC 21 2017

SALEM, OR

GMW17-34

MALH 54437

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name Last Name
Company CALICO RESOURCES USA CORP.
Address PO BOX Q
City VALE State OR Zip 97918

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [ ] Community
[X] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 890 ft.

BORE HOLE

Dia	From	To
16	0	200
14	200	355
12	355	790
10	790	950

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	8	8	S
		Calculated		
Bentonite Chips	8	199	141	S
		Calculated		

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[X] Other Bent. tagged from
Backfill placed from 892 ft. to 950 ft. Material bent chips
Filter pack from 828 ft. to 892 ft. Material sand Size 8/12
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	12	X	3	55	.250	●	○	X	
●	○	12		55	355	.375	●	○	X	
●	○	10	X	2	790	.250	●	○	X	
●	○	5	X	3	830	40	●	○	X	
○	○						○	○		

Shoe [X] Inside [ ] Outside [ ] Other Location of shoe(s) 355
Temp casing [ ] Yes Dia From + To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type v-wire slotted Material SS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/pipe size
Screen	Casing	5	830	890	.03			5

(8) WELL TESTS: Minimum testing time is 1 hour

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County MALHEUR Twp 22 S N/S Range 44 E E/W WM
Sec 8 NW 1/4 of the SE 1/4 Tax Lot 101
Tax Map Number Lot
Lat ° ' " or 43.669 DMS or DD
Long ° ' " or -117.3584 DMS or DD
( ) Street address of well (•) Nearest address
GRASSY MTN. REFER TO GPS

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	06-17-2018			

Flowing Artesian? [ ] Dry Hole? [X]

WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Ground Elevation

Material	From	To
loose brown clay with rocks	0	3
brown hard clay	3	6
red, black sandstone crumbly	6	14
red, black boulders rough	14	18
brown clay soft	18	22
brown clay red black boulders	22	34
black red brown boulders	34	76
light brown clay	76	112
brown tan clay some boulders	112	140
dark brown clay some boulders	140	200
brown clay	200	204
crumbly brown rock with clay	204	225
yellow clay with some grey rock	225	235
yellow clay	235	245
brown clay, brown & green rock	245	265
light brown clay	265	277
brown, red grey color rock	277	287
brown clay	287	292
brown red green rock	292	305

Date Started 4-17-18 Completed 6-21-18

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 7/11/18
Signed Tony Hackett

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 7-12-18
Signed Thomas Kenyon
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version: 0.95

GMW17-34 **MALH 54437**

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. LABEL# L	130031
START CARD #	1038395
ORIGINAL LOG #	

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	Material	SEAL From	To	Amt	sacks/ lbs
			Cement	199	200	70	S
					Calculated		
			Cement	200	355	27	S
					Calculated		
			Cement	0	790	124	S
					Calculated		
			Cement	0	826	296	S
					Calculated		

FILTER PACK

From	To	Material	Size
826	828	SILICA SAND	16/30

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/S creen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Material	From	To
brown red & white rock	305	320
grey rock with some grey clay	320	325
multicolored sandstone	325	330
green clay with rock	330	345
fractured rock lost circulation	345	360
fractured rock red black tan	360	371
tan clay smooth	371	372
fractured rock rough drilling, red	372	383
grey clay smooth	383	387
grey color bouncing rough sandstone	387	394
grey clay smooth	394	397
red tan sandstone fractured	397	402
yellow soft clay	402	405
tan brown clay	405	410
green rock very hard	410	420
fractured sandstone, lost circulation	420	423
yellow clay	423	430
sandstone fractured tan colored	430	438
grey clay	438	439
hard sandstone	439	441
binding bouncing fractured sandstone	441	446
yellow clay smooth	446	480
tan clay smooth	480	496
hard sandstone red brown	496	497
grey clay smooth	497	499
fractured sandstone red brown	499	500
red clay smooth	500	538
fractured sandstone red brown	538	542
brown clay smooth	542	576

Comments/Remarks

12" UNDERREAMER SHOE @ 790

10" UNDERREAMER SHOE @ 355

GMW17-34

MALH 54437

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/S creen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

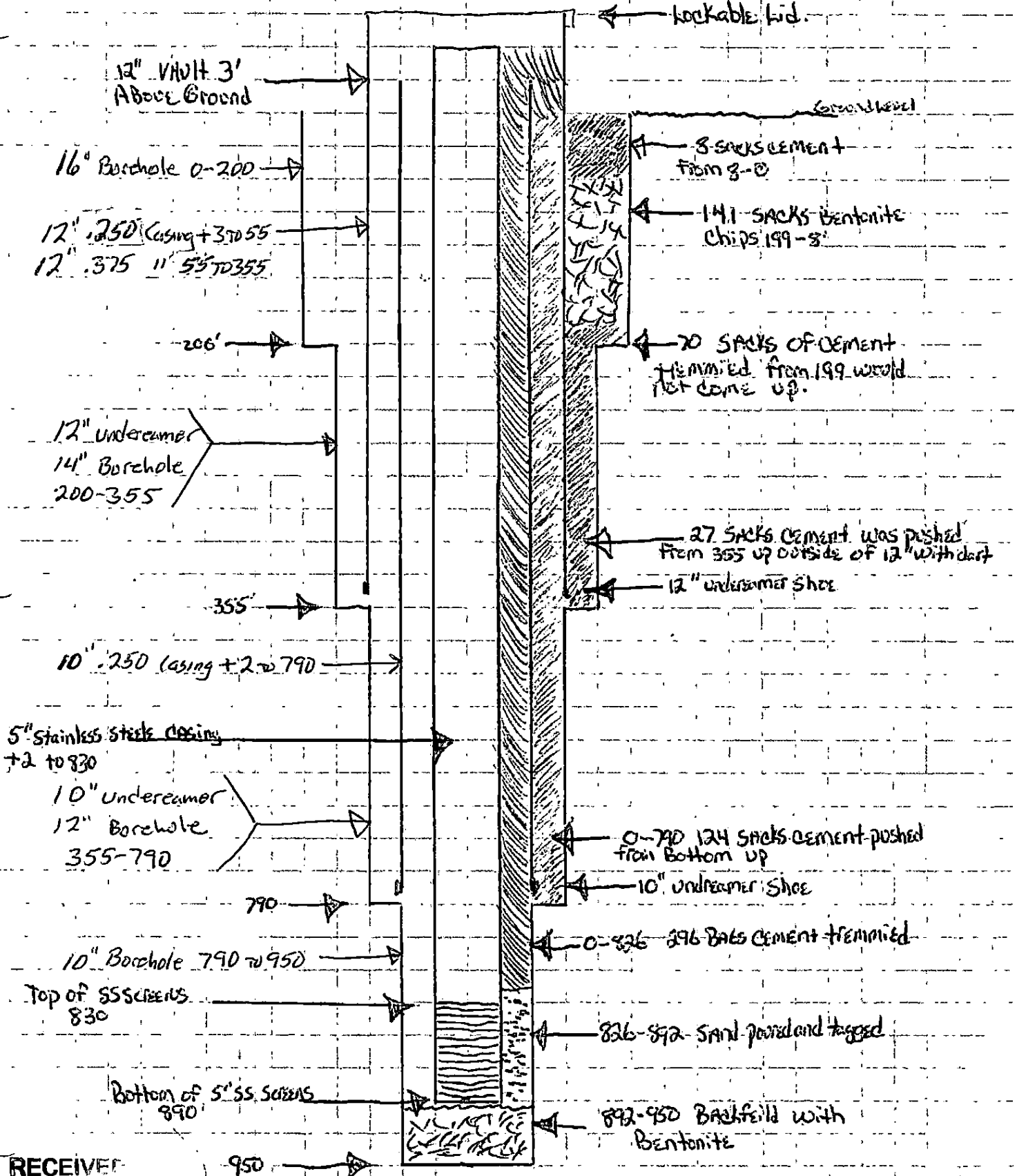
(11) WELL LOG

Material	From	To
fractured sandstone brown grey	576	585
red clay smooth	585	612
fractured grey sandstone	612	623
fractured red brown grey sandstone	623	647
fractured brown grey sandstone	647	671
grey sandstone, red black chips	671	675
grey brown white black siltstone	675	680
brown white fractured sandstone	680	690
brown red sandstone	690	695
brown sandstone	695	700
light brown yellow sandstone	700	705
brown red white black sandstone	705	710
brown sandstone	710	720
tan colored sandstone	720	730
tan colored sandstone	730	740
grey white red brown sandstone	740	762
white grey red sandstone	762	775
grey rusty red sandstone	775	800
grey red brown sandstone	800	890
brown clay & yellow	890	910
white, black, tough	910	950

Comments/Remarks

GMW17-34

MALH 54437



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Attachment B
Lithologic Logs

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 1 of 5 Hole No. GMW17-31 Depth 520

UTM East _____, North _____ Elev _____ Azimuth / Incline -90

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY/ ARG.	Silica	SULF/ pyrite	Qtz Veins	FeOx	CALCITE		Sample Number	Au ppm	Description/Remarks	COLOR
0-3		Ovb	20%	0	0	0	WK	S				OVERBURDEN - MIXED LITHO - CALCAREOUS	BROWN
3-8		Ovb	50%				0	S					OLIVE GRAY GREEN
8-17		Tgls	30%				0	S				SANDSTONE, SLTST & CLAY - CALCAREOUS	
17-22			30%				0	S					
22-28			10%				0	T					
28-41			—				TR	0				90% SANDST 10% SLTST & CLAY BLUE-GREEN - PISTACHIO GREEN	PISTACHIO GREEN
41-47		Tgls CONGLOM	—	Tr			WK					SANDST & SLTST SOME ROUNDED CONGLOM PEBBLES TRACE SILIC'D SLTST	BROWN & GREEN
47-55		CONGLOM Tgs CLAY	20%	Tr			INT					SANDST, SLTST, CLAY, CONGLOM	BRICK RED
55-60		Tgs CLAY CONGLOM		Tr			INT						"
60-65		CLAY	80%	0			MOD					RED-BROWN CLAY	RED-BROWN & GRAY
65-72		CLAY	100				WK						REDDISH-GRAY
72-77							WK						
77-82							S					RED CLAY	RED
82-87							INT						
87-92		CLAY	90										
92-97		CLAY	80	Tr								RED CLAY & SILIC'D SLTST/TUFF	RED & TAN
97-102		CLAY/ SLTST	70	WK			INT						
102-107			70	WK			M						
107-110		CLAY	100	0			T					LT. GRAY CLAY	GRAY
110-117			100	0			0						

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 2 of 5 Hole No. GMW17-31 Depth 520

UTM East _____, North _____ Elev _____ Azimuth / Incline -90

Logged by: M.F. McGINNIS Drill Type _____ Contractor _____

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY/ ARG	Silica	pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks	COLOR
117 - 122		CLAY	100	0	0	0	W					YELLOW BROWN CLAY	YELLOW BROWN
122 - 127			100				M					RED CLAY	RED BROWN
127 - 132			100				S						RED
132 - 137			100				S						RED
137 - 142			100				S						RED
142 - 147			100				S					90% CLAY 10% SS & SLTST	RED BROWN
147 - 152		SS, ARK SLTST, TUFF	W	TR			W					ARKOSE, SANDSTONE, SILTST, TUFF TUFFACEOUS SLTST RED GREEN, BROWN, TAN WHITE	MULTI
152 - 157			W	TR			W						
157 - 162			W	WK			W					10% SILIC'D SLTST & TUFF	
162 - 167			W	WK			T						
167 - 172			W	WK			T						
172 - 177			W	WK			T						
177 - 182			W	WK			T						
182 - 187		AS ABOVE + CLAY	20%	W			T					AS ABOVE PLUS GRAY CLAY	OLIVE GRN & BROWN
187 - 192			20%	W			T						"
192 - 197		SS, ARK SLTST, TUFF TR. SINTER	20%	W			T					SS, SILIC'D SLTST & TUFF 20% SINTER W/ SOME MICRO BX	"
197 - 202		SS, ARK SLTST, TUFF 30% SINTER	W	M			T					DITTO 30% SINTER	"
202 - 207		"	W	M			T					DITTO	"
207 - 212		"	W	M			T					DITTO	"
212 - 217		" + CLAY	20%	W			T					DITTO + GRAY CLAY	"

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 3 of 5 Hole No. GMW17-31 Depth 520

UTM East _____, North _____ Elev _____ Azimuth ~ Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor _____

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY / ARG	Silica	pyrite	Qtz Veins	FeOx	CALCITE		Sample Number	Au ppm	Description/Remarks	COLOR
217-222		SS, SLTST ARK, TUFF		M	0	0	T	0				SS. SILIC'D SLTST & TUFF — OLIVE GRN BROWN MAROON, GRN, TAN	MULTI
222-227		↓		M	0	0	W						
227-232		AS ABOVE + CLAY	20% / W	M	TR		W					+ CLAY	
232-237			40% / M	T	0		M					SLTST, TUFF, CLAY — YELLOW-BROWN, TAN, GRAY	YELLOW BRN TAN
237-242			10% / M	O	0		M						
242-247			10% / M	O	TR	↓	M						
247-252		SINTER SLTST	W	S	0	T	T					60% SINTER - CHALCEDONIC 40% SLTST & SILIC'D SLTST — TRACE HAIRLINE QTZ VLTS	TAN WHITE RUSTY
252-257		↓	W	S		0	T						
257-262			W	S		T	W					TRACE HAIRLINE QTZ VLTS	
262-267			W	S		T	W						
267-272		CLAY, SLTST TUFF, SINTER	70%	M	↓	0	W					30% SINTER - CHALCEDONIC 70% CLAY SLTST, TUFF	
272-277		80% CLAY SLTST 20% TUFF	80%	W	TR		T					80% DK GRAY CLAY W/ F.G. DISS PY 20% SLTST & TUFF FeOx TR-WK	DK. GRAY RUSTY BROWN
277-282		↓	80%	T	3%		T						
282-287			80%	T	5%		T						
287-292			80%	W	↓		T						
292-297			80%	W	↓		O						
297-302			80%	W	10%		T						
302-307			80%	O	↓		O						
307-312			80%	O	↓		T						
312-317		↓	80%	W	5%	↓	T	↓				↓	↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 4 of 5 Hole No. GMW17-31 Depth 520

UTM East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY / ARG	Silica	SULF / pyrite	Qtz Veins	FeOx	CALCITE		Sample Number	Au ppm	Description/Remarks	COLOR
317-322		CLAY 10% SINTER	90% / W	O	TR	O	T	O				90% CLAY 10% SINTER	BROWN TAN GRAY
322-327		SINTER	O	S	O		T					SINTER & SILIC'D SLTST WHITE SINTER ? $FeOx^T$	WHITE TAN LT. GRAY
327-332			O	S			T						
332-337			O	S			T						
337-342			O	S			T						
342-347		SINTER SILIC'D SLTST CLAY	10% / T	T			T					+ CLAY	WHITE TAN RUSTY BRN
347-352		ARK 10% CLAY	10% / W	O	TR		T					ARKOSE - WHITE & TAN $FeOx^T$ + CLAY	
352-357		ARK 10% CLAY	M	O	O		T						
357-362		ARK TUFF	M	W			T					90% ARKOSE + SILIC'D SLTST 10% TUFF & TUFFACEOUS SLTST $FeOx^T$	
362-367		ARK TUFF	10% / W	W			T						
367-372		ARK TUFF	10% / WR	W	TR		T						WHITE RUSTY BRN TAN GRAY
372-377		ARK TUFF	W	W	O		T						
377-382		ARK TUFF CLAY	10% / W	W			W					ARKOSE, TUFF, SILIC'D SLTST, CLAY $FeOx^W$	
382-387		ARK TUFF CLAY	20% / W	W			W						
387-392		↓	5% / M	M			W						
392-397		SINTER	O	S			W					SINTER - TAN, BROWN, DK. BROWN + SILIC'D SLTST $FeOx^W$	TAN BROWN BLACK
397-402		SINTER	O	S			W						
402-407		SINTER	O	S			W						
407-412		SINTER	O	S			T					$FeOx^T$	
412-417		SINTER 10% ARK	T	S			T					+ WHITE ARKOSE	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 5 of 5 Hole No. GMW17 31 Depth 520 FT

UTM ____ East ____, North ____ Elev ____ Azimuth / Incline -90°

Logged by: M.F. McGINNIS Drill Type ____ Contractor DOWN RIGHT DRILLING

DATE Start ____ Finish ____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY/ARG	Silica	pyrite	Qtz Veins	FeOx	CALCITE		Sample Number	Au ppm	Description/Remarks	COLOR
417 - 422		ARK, TUFF SINTER	0 / W	M	0	0	T	0				ARKOSE, TUFF, TUFFACEOUS SLTST, SINTER GRAY, TAN, WHITE, BRN, GREEN	MULTI
422 - 427			5% / W	M			T	T					
427 - 432			30% / M	W			T	T				+ 30% CLAY	
432 - 437		SLTST TUFF	30% / M	W			T	0				SLTST, TUFF, SILIC'D SLTST	TAN GRAY
437 - 442			30% / M	W			T	0					
442 - 447			10% / M	W	2%		T	W				(BROWN BIO → CLAY)	BRN
447 - 452		SLTST CLAY	10% / M	W	0		M	0				SLTST, CLAYSTONE, CLAY FeOx M - BRICK RED CALCITE W THROUGHOUT	TAN GRAY BRICK RED
452 - 457			10% / M	W			T	W				AS ABOVE & 5% SINTER CALC W	TAN GRAY
457 - 462		SLTST CLAY SINTER	10% / M	W			T	W				AS ABOVE & 20% SINTER	
462 - 467		SLTST CLAY	20% / S	0			0	W				SLTST, CLAYSTONE, CLAY	
467 - 472			20% / S	0	T		0	W					GRAY
472 - 477			20% / S	0	0		0	W					
477 - 482			20% / S	0	0		0	0					
482 - 487		SLTST TUFF CLAY	10% / S	0	T		0	0				TUFF, TUFFACEOUS, SLTST, CLAY (BROWN BIOTITE → CLAY)	GRAY DK BROWN
487 - 492			20% / S	0	0		T	W					
492 - 497		SLTST, TUFF CLAY, SINTER	5% / S	W			T	W				SILIC'D SLTST, TUFF, CLAY 10% SINTER	
497 - 502			20% / S	W			0	0					
502 - 507			5% / S	W			0	0				SLTST, TUFF, CLAY, SCATTERED SINTER	
507 - 512			5% / S	T			T	0					
512 - 520			5% / S	T			T	W					

T.D.

CALICO RESOURCES

GRASSY MOUNTAIN PROJECT Page 1 of 4 Hole No. GMW17-33 Depth 370 FT.

UTM NAD 83 East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	pyrite	Qtz Veins	FeOx	ARG	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	
0-5		Ovb	10	NIL	NIL	NIL	WK		S			OVERBURDEN - MIXED LITHO	TAN BRWN GRAY
5-10		Ovb	20				TR		S			ONE BASALT CHIP	
10-15		Tgis	20				NIL		S			SILTST, CLAYST, CLAY	TAN
15-20			20						S			ONE BASALT CHIP	
20-25			10						NIL				OLIVE GREEN
25-30			10									BLUE-GREEN SANDST - COARSE GR.	BLUE GREEN
30-35			0				T						
35-40			0				T						
40-45		CONGLOM Tgis	0	W			M					CONGLOM & SST & SLTST	BRWN RED GREEN
45-50		Tgs	5	W			W					GREEN & RED & BROWN SLTST & SANDST	
50-55		TUFF SLTST	20	T			S					20% CLAY 40% SANDST 40% TUFF FeO_x S	RED BRWN WHITE
55-60			0	NIL			S					80% TUFF 20% SILTST & SANDST FeO_x S	
60-65			0				S						
65-70			0				S	M					
70-75			0				S						
75-80		Tgs CLAY	80				W	S				PINK CLAY 20% TUFF & SLTST	LT. RED PNK
80-85			80				T	S				TAN TO LT BROWN CLAY 20% TUFF & SLTST	LT. BRWN
85-90			80				T	S					
90-95		TUFF	0				T	S				WHITE TUFF	WHITE
95-100		Tgs CLAY	80				T	S				TAN TO LT. BROWN CLAY	TAN

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 2 of 4 Hole No. GMW17-33 Depth 370 FT.

UTM East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	pyrite	Qtz Veins	FeOx	ARG	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	
100 - 105		CLAY	80	—	NIL	NIL	S	S	—			MED BROWN CLAY 10% TUFF	MED. BRWN
105 - 110		80% CLAY 10% TUFF 10% ARK	80	—					—			80% CLAY 10% WHITE TUFF 10% ARK	
110 - 115			80	—					—				
115 - 120			80	—					—				
120 - 125		80 ARK 20 SINTER	—	M			M	—	T			20% SINTER 80% ARKOSE	RED BRWN WHITE GRAY
125 - 130		95 ARK 5 SINTER	—	M			S	—	—			95% ARK 5% SINTER	RED BRWN TAN WHITE
130 - 135		90 ARK 10 TUFF SLTST	—					T	T			90% ARK 10% TUFFACEOUS SLTST	
135 - 140			—					T	T				
140 - 145			—					T	T				
145 - 150		80% ARK 20% TUFF	—	M				T	T			80% ARK 20% WHITE & TAN TUFF	RED BRWN GRAY TAN
150 - 155		90% SS, SLTST 10% TUFF	—	W			INT	W	—			90% SS & SLTST 10% TUFFACEOUS SLTST	RED BROWN
155 - 160		70% SS, ARK 10% SINTER 20% CLAY	W					W	—			70% SS, ARK 10% SINTER 20% CLAY	
160 - 165		20% SINTER 40 CLAY 40% SS	40	W				M	—			20% SINTER 40% CLAY 40% CLAY	
165 - 170			40	W				M	—				
170 - 175		40 SINTER 20 CLAY 40 SS/ARK	20	M			S	W	—			40% SINTER 40% SS & ARKOSE 20% CLAY	RED BRWN WHITE
175 - 180				M			INTENSE	M	—				
180 - 185				M				M	—				
185 - 190				M				M	—				
190 - 195		50% CLAY 50% ARK/SS	50	W				S	—			50% RED CLAY 50% SS/ARK	
195 - 200		CLAY SS/ARK	90	—				INT	—			90% RED CLAY 10% SS/ARK	RED

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 3 of 4 Hole No. GMW17-33 Depth 370 FT

UTM East _____, North _____ Elev _____ Azimuth — Incline -90

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY	Silica	pyrite	Qtz Veins	FeOx		$CaCO_3$	Sample Number	Au ppm	Description/Remarks	
200-205		CLAY	90	—	NIL	NIL	S		NIL			CLAY - RED BROWN & GRAY	RED BRWN GRAY
205-210		↓	90	—			M					↓	↓
210-215		80% ARK 20% CLAY	20	—			T					ARKOSE - SANDSTONE - CLAY	TAN LT. BRWN
215-220		↓	20	—			T					↓	↓
220-225		60% CLAY 40% ARK	60	—			T					CLAY - ARKOSE - SANDST	↓
225-230		↓	60	—			T					↓	↓
230-235		↓	60	—			T					↓	TAN & GRAY
235-240		SINTER SLTST TUFF, CLAY	10	S			T					SINTER & SILIC'D SLTST SOME CLAY ~10% SOME TUFF ±20%	↓
240-245		↓	10	S			—					↓	GRAY DK GRAY
245-250		↓	10	S			—					↓	↓
250-255		↓	10	S			—					↓	↓
255-260		30% CLAY SLTST SINTER, TUFF	30	M			—					30% CLAY 40% SINTER/SILIC'D SLTST 30% TUFF	↓
260-265		SINTER SILTST TUFF CLAY	10	S			—					60% SINTER/SILIC'D SILTST 30% TUFF 10% CLAY	↓
265-270		↓	10	↓			T					↓	↓
270-275		↓	10	↓			—					↓	DK GRAY BLACK
275-280		↓	10	↓			—					↓	↓
280-285		SINTER SILTST	T	↓			—					SINTER & SILIC'D SILTST TRACE CLAY	↓
285-290		↓	T	↓			—					↓	↓
290-295		CLAY	80	—			—					GRAY CLAY	GRAY
295-300		SINTER	10	S	↓	↓	—		↓			SILIC'D MICRO-BX - SINTER?	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 4 of 4 Hole No. GMW17-33 Depth 370 FT

UTM East _____, North _____ Elev _____ Azimuth / Incline -90

Logged by: MF MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY	Silica	pyrite	Qtz Veins	FeOx	ARG	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	
300 - 305		SILTST TUFF	/	M	1%	/	/	W	NIL			SILTSTONE, TUFF WK - MOD SILIC ±1% F.G. DISS PY WK - MOD ARG	GRAY DK. GRAY
305 - 310		SILTST TUFF ± CLAY	10%	M		/	/	M					
310 - 315			20%	W		/	/	M				PINK CLAY	GRAY DK GRAY PINK CLAY
315 - 320			10%	W		/	/	M					GRAY DK. GRAY BLACK
320 - 325			10%	W	1%	/	T	M				SILTST, TUFF WK SILIC MOD ARG TR. LIMONITE	
325 - 330			20%		1%	/	/	W				CLAY SILTST, TUFF 1% F.G. DISS PY	
330 - 335			10%		/	/	M					SILTST & TUFF MOD. LIMONITE	BROWN DK. GRAY
335 - 340		SILTST TUFF SINTER	/	M	/	/	W					SILIC'D SILTST / TUFF & SINTER	BROWN TAN-GRAY WHITE
340 - 345			5%	M	/	/	T						
345 - 350			5%	W	/	/	W						
350 - 355		SLTST SINTER	/	S	/	/	T	/				SILIC'D SLTST, SINTER TR. LIMONITE	
355 - 360			5%	S	/	/	T	/				MINOR CLAY	
360 - 365			5%	S	/	/	T	/					
365 - 370			/	S	/	/	T	/					
												T.D. 370 FT.	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 1 of 10 Hole No. GMW18-34 Depth 950 FT.

UTM East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start 4-17-18 Finish 6/6/18 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology		Silica	pyrite	Qtz Veins	FeOx	ARG/CLAY		Sample Number	Au ppm	Description/Remarks	COLOR
0-5		OVB		—	0	0	MOD					OVERBURDEN W/ ARKOSE	TAN BRWN RED
5-10		ARKOSE		MOD								ARKOSE, BROWN, TAN, RED – SILIC^{M}	
10-15		↓		↓			↓					↓	
15-20		↓		↓			↓					↓	↓
20-25		TUFFACEOUS SILTSTONE		STRG			TR					TUFFACEOUS SLTST, SILIC^{S}, FeOx^{T}	CREAMY WHITE
25-30		↓		↓			TR					↓	↓
30-35		↓		↓			—					↓	
35-40		CRYSTAL TUFF		↓			—					CRYSTAL TUFF W/ QTZ PHENOS, SILIC^{S}, FeOx^{T}	↓
40-45		↓		↓			TR	TR				↓	CRMY WHITE & RED
45-50		10% TUFF 90% ARK		↓			WK	TR				ARKOSE & TUFF	↓
50-55		ARKOSE		↓			WK	TR				ARKOSE SILIC^{S}	↓
55-60		↓		↓			TR					↓	CRMY WHITE & LT GRAY
60-65		↓		↓			TR					↓	↓
65-70		90% ARK 10% TUFF		STRG			WK					↓	↓
70-75		TUFF		↓			TR					TUFF	↓
75-80		CLAY & ARKOSE		MOD			ST	STRG				ARKOSE & RED CLAY ARKOSE TAN-BROWN-LT GRAY FeOx^{S} THROUGHOUT	RED & TAN
80-85		↓		↓			↓	↓				↓	↓
85-90		↓		↓			↓	↓				↓	↓
90-95		↓		↓			↓	↓				↓	↓
95-100		↓		↓	↓	↓	↓	↓				↓	↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 2 of _____ Hole No. GMW18-34 Depth _____

UTM East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start 4-17-18 Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

	Lithology											
Depth	Graphic	Lithology		Silica	pyrite	Qtz Veins	FeOx	ARG/CLAY		Sample Number	Au ppm	Description/Remarks
100-105		CLAY & ARKOSE		W	O	O	S	M				
105-110		ARKOSE		M				—				
110-115		ARKOSE & CLAY		W				M				
115-120		CLAY		—				S				
120-125				—								
125-130				—								
130-135				—								
135-140		TUFF/SLTST & CLAY		M				M				
140-145		CLAY		—				S				
145-150		TUFF TUFFACEOUS-SLTST & CLAY		S				W				
150-155				S				W				
155-160				M				M				
160-165				M	T			M				
165-170		CLAY		—	O			S				
170-175				—				S				
175-180		SINTER		INT			W	T				
180-185				INT			W	—				
185-190		SINTER/ ARKOSE		M			M	T				
190-195				M			M	W				
195-200				M			M	W				

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 3 of _____ Hole No. GMW17-34 Depth _____

UTM _____ East _____, North _____ Elev _____ Azimuth N/A Incline -90

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start 4-17-18 Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology		Silica	pyrite	Qtz Veins	FeOx	ARG/ CLAY		Sample Number	Au ppm	Description/Remarks	
200-205		90% ARKOSE 10% TUFF		M	/	/	S	O				ARKOSE - RED, SILIC MOD. SIL'D SLTST/TUFF	RED & BUFF
205-210		ARKOSE		M	/	/	S					ARKOSE - RED	RED
210-215		80% ARKOSE 20% TUFF			/	/	S					MIXED ARKOSE & TUFF	RED & BUFF
215-220					/	/	M						
220-225		70% ARKOSE 20% TUFF 10% SINTER			/	/	W					+ SINTER	RED, TAN CRMY WHITE
225-230		40% ARKOSE 20% TUFF 20% SINTER		S	/	/	W					+ SINTER	
230-235		SINTER		INT	/	/	T					WHITE SINTER	WHITE TAN BUFF
235-240					/	/	T						
240-245					/	/	T	W					
245-250					/	/	T	W					
250-255		SINTER & SILICD SLTST		S	/	T	T	O				WHITE SINTER & SILICD SILTST	WHITE TAN GRAY
255-260					/	/	T						
260-265					/	T	T						
265-270					/	/	T						
270-275		SINTER SLTST BX			/	/	T					SILTST, SINTER, & MICRO BRECCIA MICRO BX	
275-280					/	/	T					MICRO BX	
280-285					/	/	T					MICRO BX MINOR ARKOSE	
285-290					/	/	T					MICRO BX MINOR ARKOSE	WHITE GRAY, RED BUFF
290-295					/	/	T					MICRO BX	
295-300		SILTST TUFF			/	/	T					SILTST, TUFF, MINOR SINTER	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 4 of _____ Hole No. GMW18-34 Depth _____

UTM _____ East _____, North _____ Elev _____ Azimuth / Incline -90

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start 4-17-18 Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology		Silica	pyrite	Qtz Veins	FeOx	ARG/ CLAY		Sample Number	Au ppm	Description/Remarks	
300-305		SLTST TUFF SINTER		S	O	O	W	T				SILIC'D SLTST, TUFF SINTER	TAN BROWN
305-310		↓		↓		T	T	W				DITTO + CLAY + POSSIBLE QTZ VLT CHIP	↓
310-315		BLACK SINTER				O	T	/				BLACK SINTER & SILIC'D SLTST	BLACK GRAY
315-320		↓				↓	O	-				↓	↓
320-325		+ CLAY						W				DITTO + CLAY	↓
325-330		SINTER SILTST						W				SILIC'D SLTST & SINTER, TAN, OLIVE, GRAY & CLAY	TAN OLIVE GRAY
330-335		↓		↓				W				↓	↓
335-340				M				S					
340-345				S				S					
345-350				↓		↓		-				NO CLAY	↓
350-355		↓		↓		T		/				NO CLAY	TAN OLIVE RED
355-360		SILTST CLAY		M		O		S				SILTST & CLAY	GRAY BLACK
360-365		NO SAMPLE					↓	-				NO SAMPLE	/
365-370		SILTST SINTER		S		O	W	M				VARI-COLORED SILTST & SINTER	TAN, BROWN GRAY, BLACK
370-375		↓		↓		↓	T	M				↓	↓
375-380		↓		↓			T	M				↓	↓
380-385		CLAY		O			-	INT				CLAY · MED GRAY	GRAY
385-390		↓		↓			-	↓				↓	↓
390-395							-						
395-400		↓		↓	↓	↓	-	↓				↓	↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 5 of _____ Hole No. GMW18-34 Depth _____

UTM 12 East _____, North _____ Elev _____ Azimuth NA Incline -90

Logged by: M.F. McGINNIS Drill Type _____ Contractor _____

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

	Lithology											
Depth	Graphic	Lithology	ARG CLAY	Silica	SULF/ pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks
400		CLAY SINTER SILTST	S	W	M	NIL	T					CLAY, SINTER, SILTSTONE GRAY TAN
405		↓	S	W	M	↓	T					↓ ↓
410		↓	S	W	M	↓	T					↓ ↓
415		↓	S	W	M	↓	T					↓ ↓
420		ARKOSE SILTST	W	W	M	↓	W					80% ARKOSE, 20% SILIC'D SILTST GRAY TAN BROWN
425		↓	W	S	M	↓	W					↓ ↓
430		↓	M	S	M	↓	W					↓ ↓
435		↓	M	W	W	↓	M					↓ ↓
440		ARKOSE SILTST SINTER	—	W	T	↓	M					70% ARKOSE 20% SILTST 10% SINTER ↓
445-450		↓	—	S	T	↓	M					↓ ↓
450		SILTST SANDST	T	S	T	↓	T					SILIC'D SILTST, SANDSTONE, ~10% ARKOSE TAN BUFF GRAY
455		SINTER SILTST	T	↓	T	↓	T					80% SINTER 20% SILTST ↓
460		↓	T	↓	W	↓	T					↓ ↓
465		ARKOSE SILTST	—	↓	T	↓	T					80% ARKOSE 20% SILTST ↓
470		↓	—	↓	T	↓	T					↓ ↓
475		↓	—	↓	T	↓	T					↓ ↓
480		↓	—	↓	T	↓	T					↓ ↓
485		↓	—	↓	T	↓	T					↓ ↓
490		↓	—	↓	T	↓	T					↓ ↓
495		↓	—	↓	T	↓	T					↓ ↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 6 of _____ Hole No. GMW18-34 Depth _____

UTM 12 East _____, North _____ Elev _____ Azimuth NA Incline -90

Logged by: M.F. MCGINNIS Drill Type _____ Contractor _____

DATE Start 4-17-18 Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY-ARG	Silica	SULF pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks	
500-505		ARKOSE SILTST	T	M	T	O	T					80% ARKOSE 20% SILTST	TAN BROWN GRAY
505		CLAY SILTST	S	W	M							CLAY, SILTSTONE	
510		↓	S	W	M							↓	
515		↓	S	W	M							↓	
520-525		N/S		—	T							NO SAMPLE	
525		CLAY SINTER	M	S	T							CLAY & SINTER	
530		SINTER	M	INT	↓							SINTER	
535		↓	O	↓	↓							↓	
540		↓	↓	↓	↓							↓	
545		↓	↓	↓	↓							↓	
550		↓	↓	↓	↓							↓	
555		↓	↓	↓	↓							↓	
560		↓	↓	↓	↓							↓	
565		SINTER SILTST TUFF	↓	S	W							80% SINTER 10% SILTST 10% TUFF	
570		↓	↓	↓	W							↓	
575		SINTER ARK	↓	↓	↓							80% SINTER 20% ARK	
580		↓	↓	↓	↓							↓	
585		SINTER SILTST	↓	↓	T							90% SINTER 10% SILTST SILICD	
590		↓	↓	↓	T							↓	
595-600		↓	↓	↓	T	↓	↓					↓	↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 7 of _____ Hole No. GMW18-34 Depth _____

UTM [illegible] East _____, North _____ Elev _____ Azimuth — Incline -90

Logged by: M.F. MCGINNIS Drill Type _____ Contractor _____

DATE Start 4-17-18 Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

	Lithology											
Depth	Graphic	Lithology	CLAY-ARG	Silica	SULF-pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks
600		SINTER	—	INT	T	0	T					SINTER
605		CLAY SILTST ARKOSE	M	W	W		T					CLAY & SILTST & ARKOSE
610		↓	M	W	W		T					↓
615		SILTST ARKOSE	T	W	T		M					SILTST & ARKOSE
620		↓	T	W	T		M					↓
625		SINTER	—	INT	W		T					SINTER
630		↓	—	↓	W		T					↓
635		↓	—	↓	W		W					↓
640		↓	—	↓	W		W					↓
645		SINTER SILTST	T	S	T		↓					SINTER & SILTST
650		↓	T	↓	T		↓					↓
655		ARKOSE SILTST	W	S	T		↓					80% ARKOSE 20% SILTST
660		↓	W	↓	T		↓					↓
665		↓	—	↓	T		↓					↓
670		ARKOSE SILTST	—	↓	T		↓					90% ARKOSE 10% SILTST
675		↓	—	↓	T		↓					↓
680		↓	—	↓	T		↓					↓
685		↓	—	↓	T		↓					↓
690		↓	—	↓	T		M					↓
695-700		SS & SLTST	—	M	T	↓	M					SANDST & SILTST

DK BROWN TAN
BROWN GRAY TAN
↓
↓
↓
DK BROWN TAN
↓
BROWN TAN GRAY
↓
↓
↓
↓
TAN YELLOW BROWN
↓

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 8 of _____ Hole No. GMW18-34 Depth _____

UTM 22 East _____, North _____ Elev _____ Azimuth / Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor _____

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay/Alt	Silica	Sulf. pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks	
700 - 705		ARK SS SILTST	T	M	T	—	M					50% ARKOSE - SS 50% SLTST	
705		SILTST SS TUFF	T		T							SILIC'D SLTST, TUFF & SANDST 80% SILTST 20% MIX SS & TUFF	
710			T		T								
715			T	S	T								
720			T	S	T								
725			O	M	T								
730				M	—								
735		TUFF SS-SILTST		M	—		W					60% TUFF 40% SS-SLTST POSS. SINTER ?	
740				M	—		W						
745		ARKOSE SILTST		S	—		W					80% ARKOSE 20% SILIC'D SILTST POSS. SINTER ?	
750					—		W						
755					W		M					90% ARKOSE 10% SILTST	
760							M						
765							M						
770							S						
775							M						
780							W					70% ARKOSE 30% SILTST	
785							M						
790		SILTST ARKOSE					M					70% SILTST 30% ARKOSE	
795 - 800		ARKOSE SILTST					W					90% ARKOSE 10% SILTST	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 9 of _____ Hole No. GMW18-34 Depth 950 FT

UTM [illegible] East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	ARG CLAY	Silica	pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks	
800-805		SS-SLTST	O	S	T	T	W					SANDST - SILTST TUFFACEOUS SILTST; FeOx on Frax	TAN WHITE GRAY
810					W	—	W					DISS F.G. PY IN GRAY SILTST	
815					W	—	W						
820					W	—	W						
825						—	W						
830						—	W						
835						—	W						
840						—	W						
845						—	W						
850						—	W						
855						T	W						
860						—	W						
865						—	W						
870		SILTST. TUFF SILTST	W	M	—	O	M					SILTST & TUFFACEOUS SILTST; FeOx DISS	BUFF TAN WHITE
875			W	M	—		M						
880			W	M	—		M						
885			W	M	—		M						
890		SILIC SST	O	S	T		W					SANDST - SILTST SILIC STRONG	DK GRAY BROWN
895		CLAY	S	T	—		T					CLAY W/ SANDST & SILTST	
900		CLAY	S	T	—		T						

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 10 of 10 Hole No. GMW18-34 Depth 950 FT

UTM 12 East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: MF MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start 17 APRIL 2018 Finish 6 JUNE 2018 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	CLAY ARG	Silica	pyrite	Qtz Veins	FeOx			Sample Number	Au ppm	Description/Remarks	
900 - 905		TUFF SANDST SILTST	T	M	O	O	W					MIXED TUFF W/ MINOR SANDST & SILTST FeOx ON FRAX	GRAY BROWN WHITE
910		↓	T	↓	↓	↓	↓					↓	↓
915		↓	O	↓	↓	↓	↓					↓	↓
920		TUFF	↓	M	↓	↓	↓					TUFF	↓
925		↓	↓	↓	↓	↓	↓					↓	↓
930		↓	↓	↓	↓	↓	↓					↓	↓
935		↓	↓	↓	↓	↓	↓					↓	↓
940		↓	↓	↓	↓	↓	↓					↓	↓
945		↓	↓	↓	↓	↓	↓					↓	↓
950		↓	↓	↓	↓	↓	↓					↓	↓
		TOTAL DEPTH			950 FEET							NO WATER!	
		6/6/18											

Attachment C
Photographs



Photo 1. GMW17-31 well head completion



Photo 2. GMW17-31 well tag



Photo 3. GMW17-33 well head completion



Photo 5. GMW17-33 well tag



Photo 6. GMW18-34 well head completion

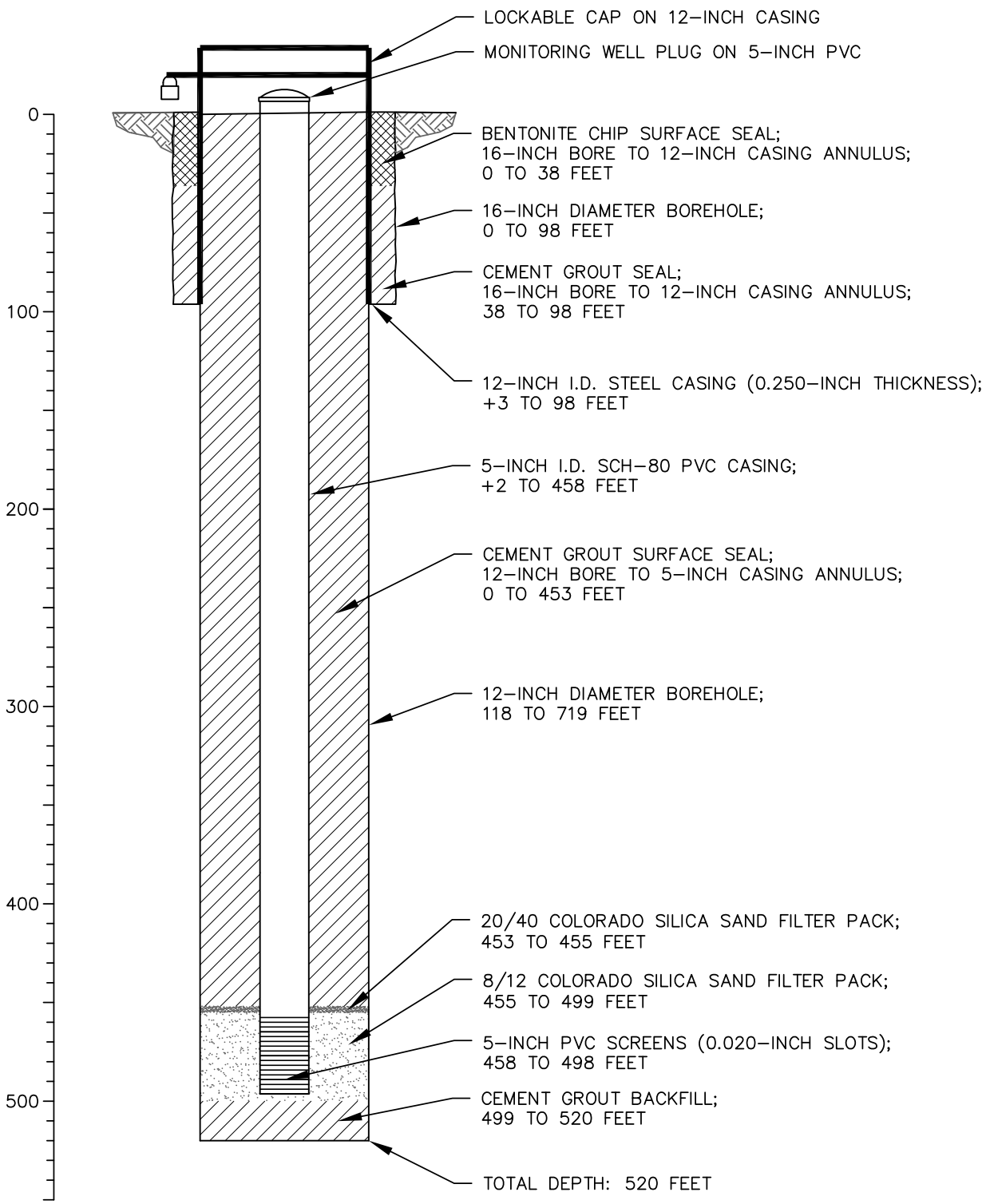


Photo 7. GMW18-34 5-inch and 12-inch casings



Photo 8. GMW18-34 well tag

Attachment D
As-Built Well Drawings



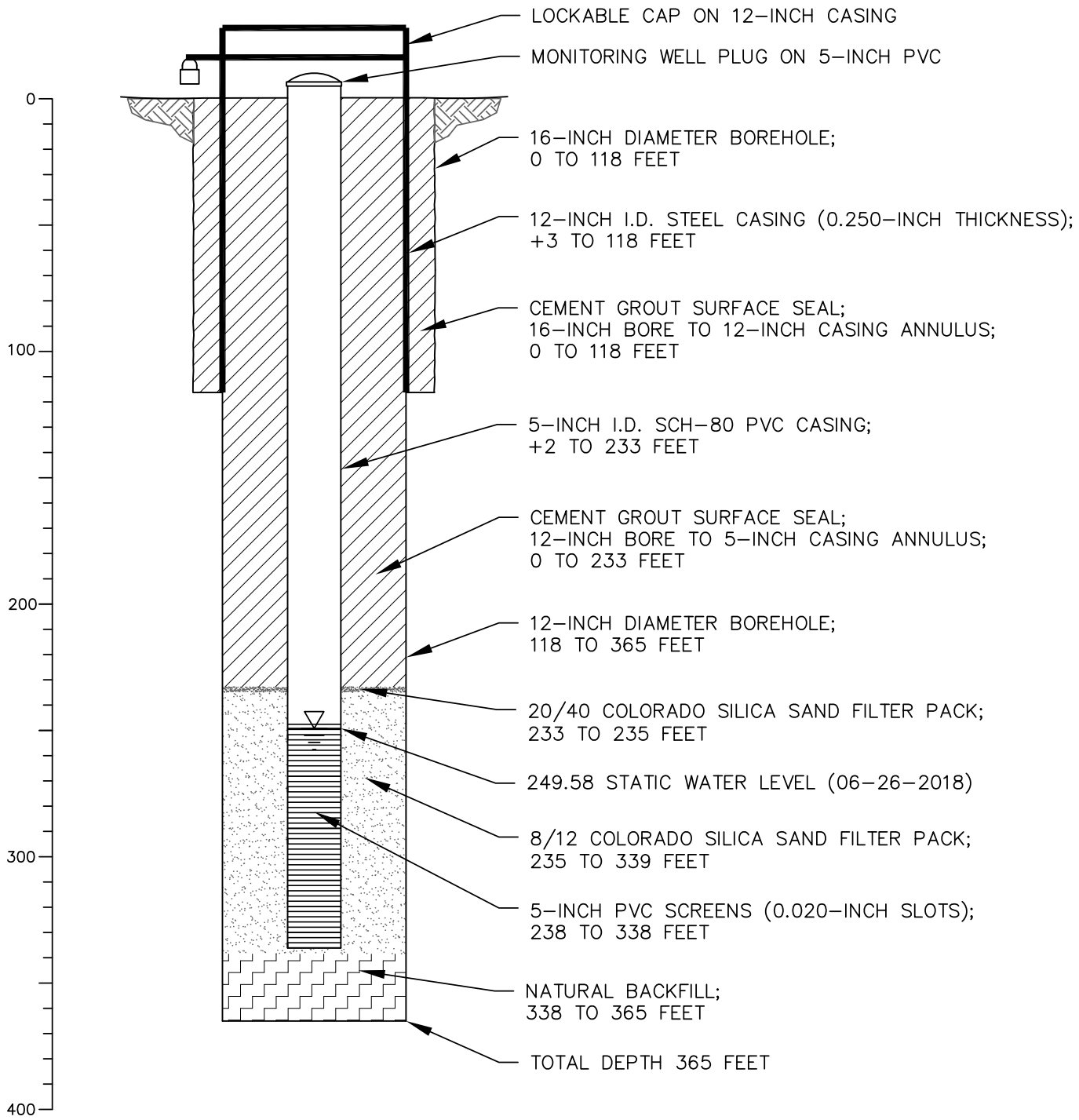
NOTE: DRY WELL. NO WATER ENCOUNTERED AT COMPLETED DEPTH.

SPF WATER ENGINEERING
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MONITORING WELL GMW 17–31 AS–BUILT

SCALE: NTS
DRAWN BY: STA

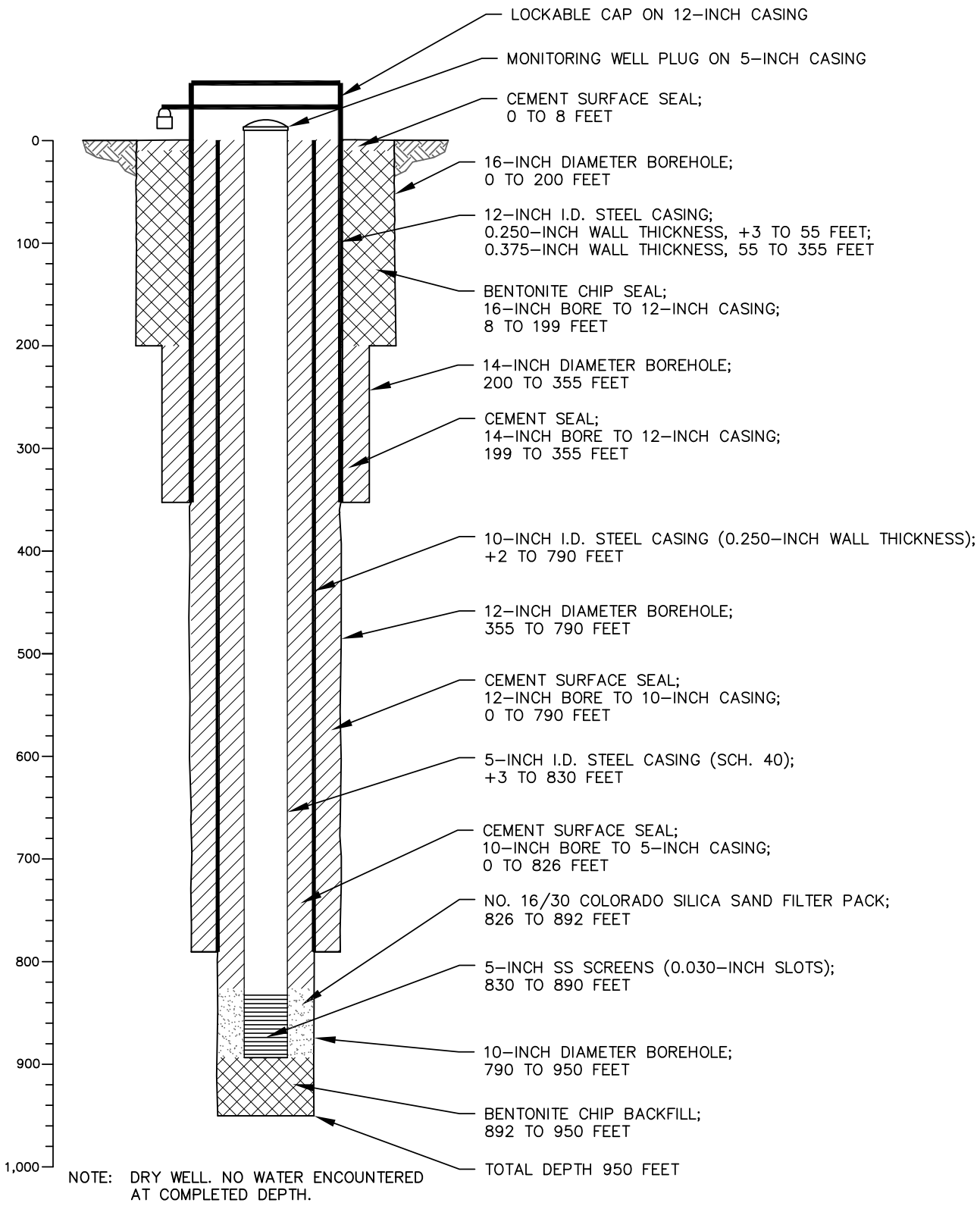
PROJECT #1294.0010



SPF WATER
ENGINEERING
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MONITORING WELL GMW 17-33 AS-BUILT

SCALE: NTS	PROJECT #1294.0010
DRAWN BY: STA	



NOTE: DRY WELL. NO WATER ENCOUNTERED AT COMPLETED DEPTH.

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CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MONITORING WELL GMW 18–34 AS–BUILT

SCALE: NTS
DRAWN BY: STA
PROJECT #1294.0010

Attachment E
GMW18-33 Test Pumping Data and Water Level Graphs from Nearby Wells

Grassy Mountain GMW17-33 Pumping Test
12/14/2017 through 12/18/2017

Tested by Down Right Drilling & Pump. Supervised by Kurt Newbry (SPF Water Engineering).

Pump type: 5-HP Submersible, A.Y. McDonald Mfg. Co. 24500R.

Flow measured with totalized with a Siemens Mag Flow Meter and calibration checked by timing a 5-gallon buckett.

Water level measured with a non-stretch 800-foot Waterline well sounder .

Measurement Point: top of PVC casing approximately 1.5 feet above ground surface.

Date / Time	Elapsed Time (minutes)	t'	t/t'	Water Level (ft bmp, mp = 18" agl)	Draw Down (feet)	Flow (gpm)	Totalizer (million gallons)	Comments
11/29/2017 17:52				242.83				
12/13/2017 10:07				242.52				
12/13/2017 15:05				242.46				
12/14/2017 14:00	0			243.07			0.074	pump on
12/14/2017 14:03	3			247.84	4.77	29.8		
12/14/2017 14:04	4			248.36	5.29	30.2		
12/14/2017 14:05	5			248.82	5.75	30.1		
12/14/2017 14:06	6			249.29	6.22	29.9	0.0742	
12/14/2017 14:07	7			249.58	6.51			
12/14/2017 14:08	8			249.88	6.81			
12/14/2017 14:09	9			250.22	7.15			
12/14/2017 14:10	10			250.51	7.44	30.1		
12/14/2017 14:12	12			250.99	7.92	30		
12/14/2017 14:14	14			251.64	8.57			
12/14/2017 14:17	17			252.27	9.2			
12/14/2017 14:20	20			253	9.93			
12/14/2017 14:24	24			253.74	10.67			
12/14/2017 14:27	27			254.24	11.17	30.1		
12/14/2017 14:30	30			254.77	11.7	30.1		
12/14/2017 14:36	36			255.72	12.65			
12/14/2017 14:40	40			256.21	13.14	30		
12/14/2017 14:45	45			256.94	13.87	30		
12/14/2017 14:50	50			257.45	14.38			
12/14/2017 14:55	55			258.01	14.94			
12/14/2017 15:00	60			258.28	15.21	29.9		
12/14/2017 15:08	68			259.09	16.02	29.9		
12/14/2017 15:36	96			260.99	17.92			
12/14/2017 15:45	105			261.34	18.27			
12/14/2017 15:54	114			262.04	18.97			
12/14/2017 16:11	131			262.85	19.78			
12/14/2017 16:25	145			263.45	20.38			
12/14/2017 16:41	161			264.05	20.98	29.6		
12/14/2017 17:02	182			264.82	21.75	30.2		
12/14/2017 17:42	222			266.1	23.03	30.1		
12/14/2017 18:00	240			266.54	23.47	30	0.0812	
12/14/2017 18:52	292			267.73	24.66	30.1		
12/14/2017 20:11	371			268.95	25.88	30		
12/14/2017 21:23	443			269.94	26.87	30.2		
12/14/2017 23:23	563			270.74	27.67	30.1		
12/15/2017 0:30	630			271.14	28.07	30		
12/15/2017 1:35	695			271.44	28.37	29.9		
12/15/2017 2:28	748			271.54	28.47	29.9		
12/15/2017 3:29	809			271.64	28.57	30.2		
12/15/2017 4:29	869			271.74	28.67	29.9		
12/15/2017 5:28	928			271.74	28.67	30.1		
12/15/2017 6:28	988			271.84	28.77	30		
12/15/2017 7:29	1049			271.94	28.87	30.1		
12/15/2017 8:29	1109			272.04	28.97	29.9		
12/15/2017 9:28	1168			272.04	28.97	29.8		
12/15/2017 10:28	1228			272.04	28.97	29.8		
12/15/2017 11:45	1305			272.24	29.17	29.9		
12/15/2017 12:45	1365			272.34	29.27	29.8		

Grassy Mountain GMW17-33 Pumping Test
12/14/2017 through 12/18/2017

Tested by Down Right Drilling & Pump. Supervised by Kurt Newbry (SPF Water Engineering).

Pump type: 5-HP Submersible, A.Y. McDonald Mfg. Co. 24500R.

Flow measured with totalized with a Siemens Mag Flow Meter and calibration checked by timing a 5-gallon buckett.

Water level measured with a non-stretch 800-foot Waterline well sounder .

Measurement Point: top of PVC casing approximately 1.5 feet above ground surface.

Date / Time	Elapsed Time (minutes)	t'	t/t'	Water Level (ft bmp, mp = 18" agl)	Draw Down (feet)	Flow (gpm)	Totalizer (million gallons)	Comments
12/15/2017 13:45	1425			272.44	29.37	29.9		
12/15/2017 14:45	1485			272.64	29.57	29.9		
12/15/2017 15:45	1545			273.04	29.97	30		
12/15/2017 16:45	1605			273.14	30.07			
12/15/2017 17:45	1665			273.34	30.27			
12/15/2017 18:45	1725			273.44	30.37			
12/15/2017 19:45	1785			273.74	30.67			
12/15/2017 20:45	1845			273.94	30.87			
12/15/2017 21:45	1905			274.34	31.27			
12/15/2017 22:45	1965			274.54	31.47			
12/15/2017 23:45	2025			274.74	31.67			
12/16/2017 0:45	2085			275.04	31.97	29.8	0.1362	
12/16/2017 1:45	2145			275.64	32.57			
12/16/2017 2:45	2205			275.94	32.87			
12/16/2017 3:45	2265			276.34	33.27			
12/16/2017 4:45	2325			276.84	33.77			
12/16/2017 5:45	2385			277.24	34.17			
12/16/2017 6:45	2445			277.64	34.57			
12/16/2017 7:45	2505			278.14	35.07			
12/16/2017 8:45	2565			278.44	35.37			
12/16/2017 9:45	2625			279.04	35.97			
12/16/2017 12:45	2805			280.22	37.15			
12/16/2017 13:45	2865			280.59	37.52			
12/16/2017 14:45	2925			280.89	37.82			
12/16/2017 15:45	2985			281.17	38.1			
12/16/2017 16:55	3055			281.58	38.51			
12/16/2017 17:45	3105			281.7	38.63			
12/16/2017 18:45	3165			281.97	38.9			
12/16/2017 19:45	3225			282.38	39.31			
12/16/2017 20:45	3285			282.82	39.75			
12/16/2017 21:45	3345			285.54	42.47			
12/16/2017 22:45	3405			302.29	59.22			
12/16/2017 23:05	3425			314.79	71.72	29.9	0.1763	
12/16/2017 23:10	3430			317.86	74.79			
12/16/2017 23:15	3435			319.46	76.39			
12/16/2017 23:20	3440			320.94	77.87			
12/16/2017 23:25	3445			322.79	79.72			
12/16/2017 23:30	3450			325.94	82.87			
12/16/2017 23:32	3452			327.86	84.79			
12/16/2017 23:34	3454			329.39	86.32			
12/16/2017 23:36	3456			330.14	87.07			
12/16/2017 23:38	3458			330.55	87.48			
12/16/2017 23:40	3460			330.69	87.62	29	0.1774	flow decreasing due to increase in drawdown
12/16/2017 23:42	3462			330.89	87.82			
12/16/2017 23:45	3465			331.09	88.02			
12/16/2017 23:47	3467			331.15	88.08			
12/16/2017 23:50	3470			331.39	88.32			
12/16/2017 23:55	3475			332.25	89.18			
12/17/2017 0:00	3480			332.74	89.67			
12/17/2017 0:10	3490			332.75	89.68			
12/17/2017 0:15	3495			333.65	90.58			
12/17/2017 0:20	3500			333.49	90.42			

Grassy Mountain GMW17-33 Pumping Test
12/14/2017 through 12/18/2017

Tested by Down Right Drilling & Pump. Supervised by Kurt Newbry (SPF Water Engineering).

Pump type: 5-HP Submersible, A.Y. McDonald Mfg. Co. 24500R.

Flow measured with totalized with a Siemens Mag Flow Meter and calibration checked by timing a 5-gallon buckett.

Water level measured with a non-stretch 800-foot Waterline well sounder .

Measurement Point: top of PVC casing approximately 1.5 feet above ground surface.

Date / Time	Elapsed Time (minutes)	t'	t/t'	Water Level (ft bmp, mp = 18" agl)	Draw Down (feet)	Flow (gpm)	Totalizer (million gallons)	Comments
12/17/2017 0:30	3510			333.65	90.58			
12/17/2017 0:40	3520			333.74	90.67			
12/17/2017 0:45	3525			334.04	90.97	29	0.1792	
12/17/2017 0:47	3527			330.36	87.29	27		reduce flow to 27 gpm
12/17/2017 0:49	3529			329.64	86.57			
12/17/2017 0:51	3531			328.17	85.1			
12/17/2017 0:53	3533			327.65	84.58			
12/17/2017 0:55	3535			327.36	84.29			
12/17/2017 0:57	3537			327.25	84.18			
12/17/2017 1:00	3540			327.24	84.17			
12/17/2017 1:15	3555			328.55	85.48			
12/17/2017 1:35	3575			329.66	86.59			
12/17/2017 2:00	3600			332.28	89.21			
12/17/2017 2:30	3630			332.95	89.88			
12/17/2017 2:35	3635			334.04	90.97			
12/17/2017 2:40	3640			331.65	88.58	25	0.1824	reduce flow to 25 gpm
12/17/2017 2:45	3645			327.39	84.32			
12/17/2017 2:50	3650			322.88	79.81			
12/17/2017 3:15	3675			318.58	75.51			
12/17/2017 4:00	3720			321.2	78.13			
12/17/2017 5:00	3780			323.13	80.06			
12/17/2017 5:10	3790			325.37	82.3			
12/17/2017 5:30	3810			325.99	82.92			
12/17/2017 6:00	3840			328.3	85.23			
12/17/2017 6:30	3870			329.92	86.85			
12/17/2017 7:00	3900			332.87	89.8			
12/17/2017 8:30	3990			332.99	89.92			
12/17/2017 9:00	4020			333.75	90.68			
12/17/2017 9:20	4040			333.79	90.72			
12/17/2017 9:30	4050			333.81	90.74	24.5	0.1926	
12/17/2017 10:00	4080			310.94	67.87	19.9	0.193	reduce flow to 20 gpm
12/17/2017 11:00	4140			294.01	50.94			
12/17/2017 12:00	4200			294.94	51.87			
12/17/2017 13:00	4260			294.96	51.89			
12/17/2017 14:00	4320			295.02	51.95			
12/17/2017 15:00	4380			295.94	52.87			
12/17/17 16:00	4440			296.54	53.47			
12/17/17 17:00	4500			296.94	53.87			
12/17/17 18:00	4560			297.94	54.87			
12/17/17 19:00	4620			298.44	55.37			
12/17/17 20:00	4680			300.24	57.17	20.2	0.2052	reduced flow to 17.5 gpm
12/17/17 21:00	4740			285.34	42.27	17.5	0.2062	
12/17/17 22:00	4800			284.34	41.27			
12/17/17 23:00	4860			284.24	41.17			
12/18/17 1:00	4920			284.24	41.17			
12/18/17 2:00	4980			284.24	41.17			
12/18/17 3:00	5040			284.34	41.27			
12/18/17 4:00	5100			284.44	41.37			
12/18/17 5:00	5160			284.64	41.57			
12/18/17 6:00	5220			284.94	41.87			
12/18/17 7:00	5280			285.24	42.17			
12/18/17 8:00	5340			285.84	42.77			

Grassy Mountain GMW17-33 Pumping Test
12/14/2017 through 12/18/2017

Tested by Down Right Drilling & Pump. Supervised by Kurt Newbry (SPF Water Engineering).

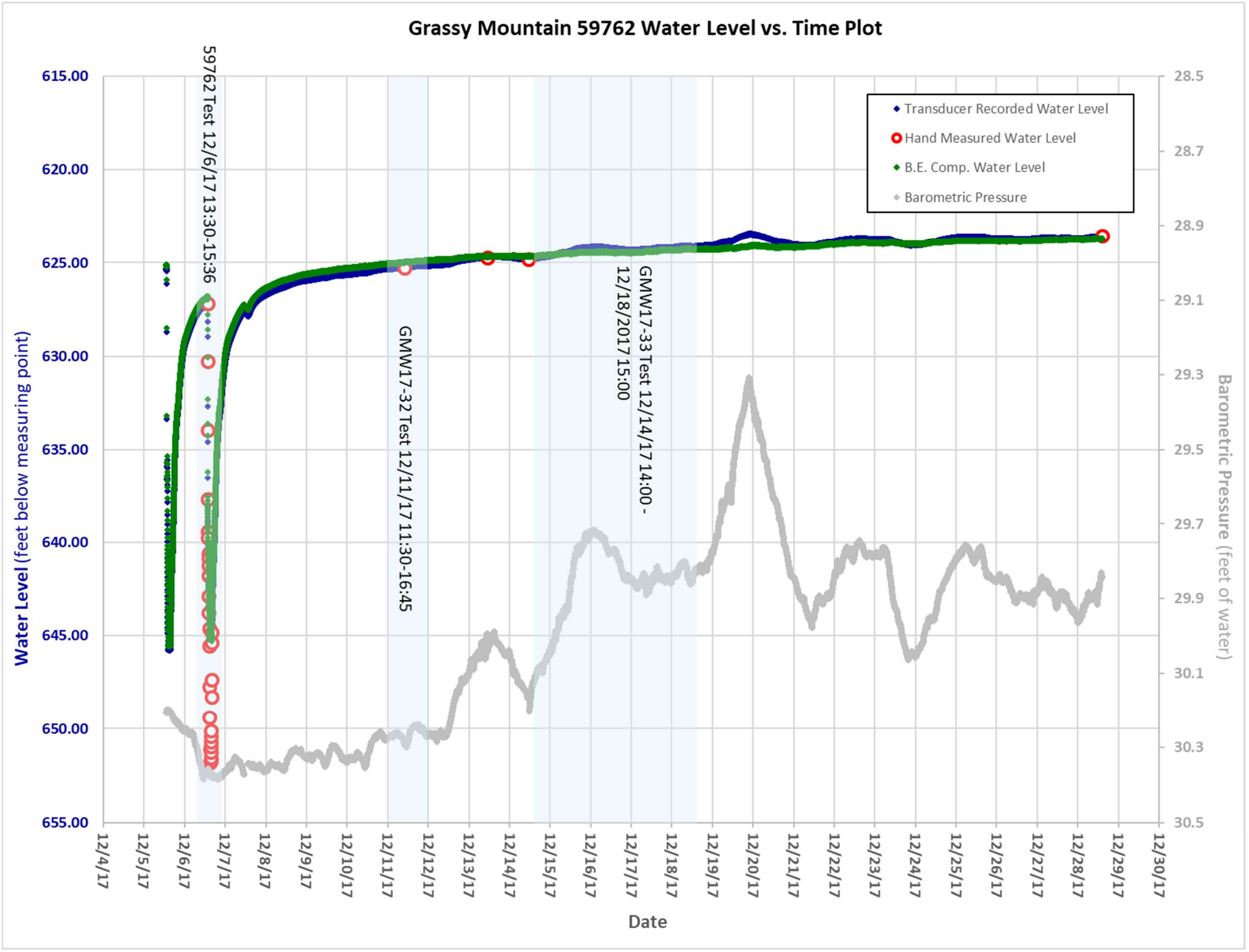
Pump type: 5-HP Submersible, A.Y. McDonald Mfg. Co. 24500R.

Flow measured with totalized with a Siemens Mag Flow Meter and calibration checked by timing a 5-gallon buckett.

Water level measured with a non-stretch 800-foot Waterline well sounder .

Measurement Point: top of PVC casing approximately 1.5 feet above ground surface.

Date / Time	Elapsed Time (minutes)	t'	t/t'	Water Level (ft bmp, mp = 18" agl)	Draw Down (feet)	Flow (gpm)	Totalizer (million gallons)	Comments
12/18/17 9:00	5400			286.44	43.37			
12/18/17 10:00	5460			287.04	43.97			
12/18/17 11:00	5580			287.74	44.67			
12/18/17 12:00	5640			288.14	45.07			
12/18/17 13:00	5700			288.64	45.57			
12/18/17 13:27	5727			288.7	45.63			
12/18/17 13:56	5756			289.04	45.97			
12/18/17 14:00	5760			289.34	46.27			
12/18/17 14:57	5817			289.44	46.37			
12/18/17 15:00	5820	0		289.46	46.39	17.2	0.2244	pump off
12/18/17 15:01	5821	1	5821	282.37	39.3			
12/18/17 15:02	5822	2	2911	282.05	38.98			
12/18/17 15:03	5823	3	1941	281.97	38.9			
12/18/17 15:04	5824	4	1456	281.83	38.76			
12/18/17 15:05	5825	5	1165	281.75	38.68			
12/18/17 15:06	5826	6	971	281.64	38.57			
12/18/17 15:07	5827	7	832.4286	281.63	38.56			
12/18/17 15:08	5828	8	728.5	281.6	38.53			
12/18/17 15:09	5829	9	647.6667	281.55	38.48			
12/18/17 15:10	5830	10	583	281.49	38.42			
12/18/17 15:12	5832	12	486	281.41	38.34			
12/18/17 15:14	5834	14	416.7143	281.3	38.23			
12/18/17 15:16	5836	16	364.75	281.19	38.12			
12/18/17 15:18	5838	18	324.3333	281.12	38.05			
12/18/17 15:20	5840	20	292	281.04	37.97			
12/18/17 15:22	5842	22	265.5455	280.94	37.87			
12/18/17 15:24	5844	24	243.5	280.89	37.82			
12/18/17 15:29	5849	29	201.6897	280.74	37.67			
12/18/17 15:34	5854	34	172.1765	280.57	37.5			
12/18/17 15:39	5859	39	150.2308	280.45	37.38			
12/18/17 15:44	5864	44	133.2727	280.29	37.22			
12/18/17 15:49	5869	49	119.7755	280.17	37.1			
12/18/17 15:54	5874	54	108.7778	280.44	37.37			
12/18/17 15:59	5879	59	99.64407	279.94	36.87			
12/28/17 13:26	20126	14306	1.406822	248.84	5.77			
3/7/2018 11:18	119358	113538	1.05126	246.21	3.14			
6/26/2018 9:56	279116	273296	1.021296	249.38	6.31			


Grassy Mountain 59762 Water Level vs. Time Plot
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
Hand Measured Water Level
B.E. Comp. Water Level
Barometric Pressure
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
615.00
620.00
625.00
630.00
635.00
640.00
645.00
650.00
655.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
12/4/17
12/5/17
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12/7/17
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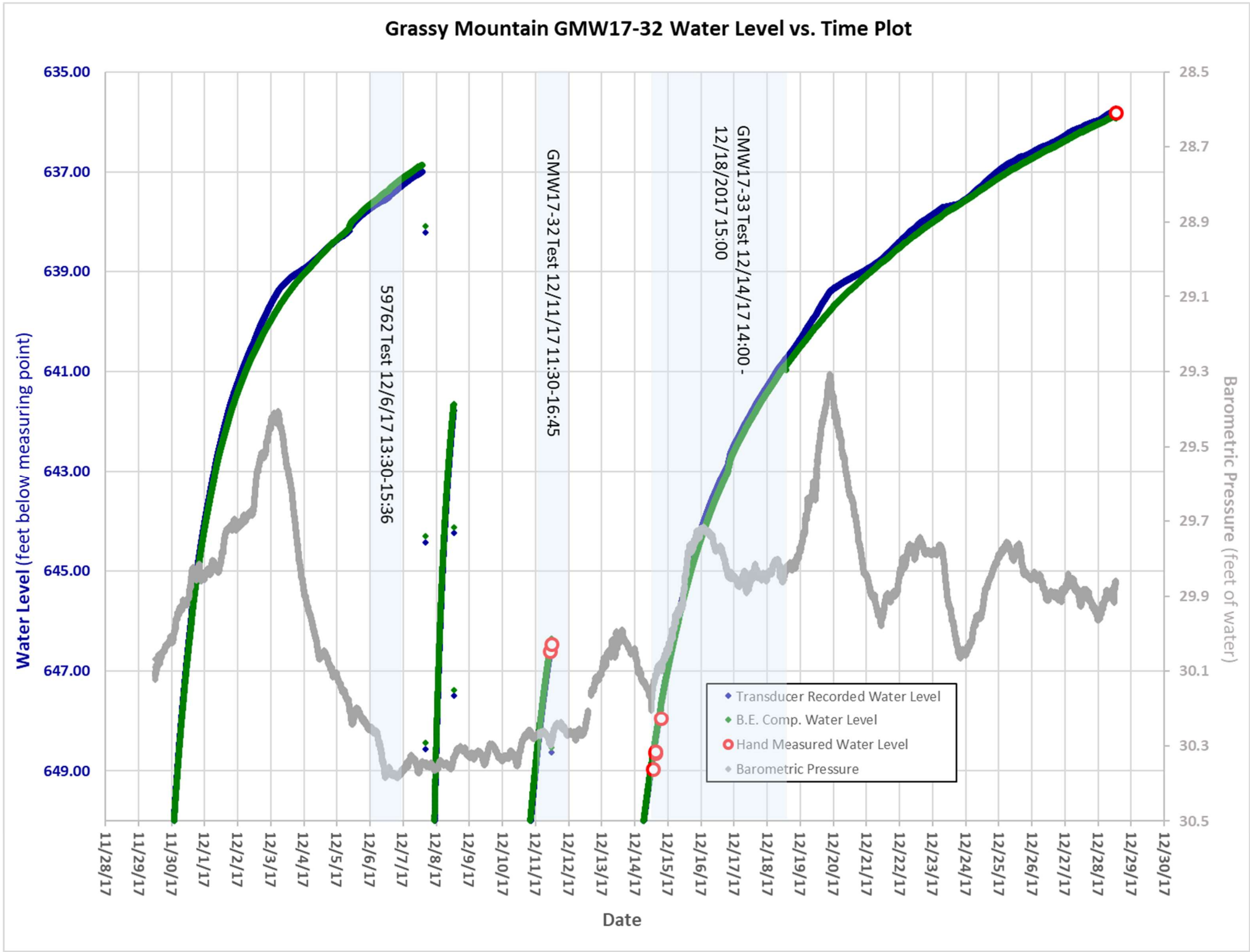
12/30/17


Grassy Mountain GMW17-32 Water Level vs. Time Plot
Water Level (feet below measuring point)
635.00
637.00
639.00
641.00
643.00
645.00
647.00
649.00
Barometric Pressure (feet of water)
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
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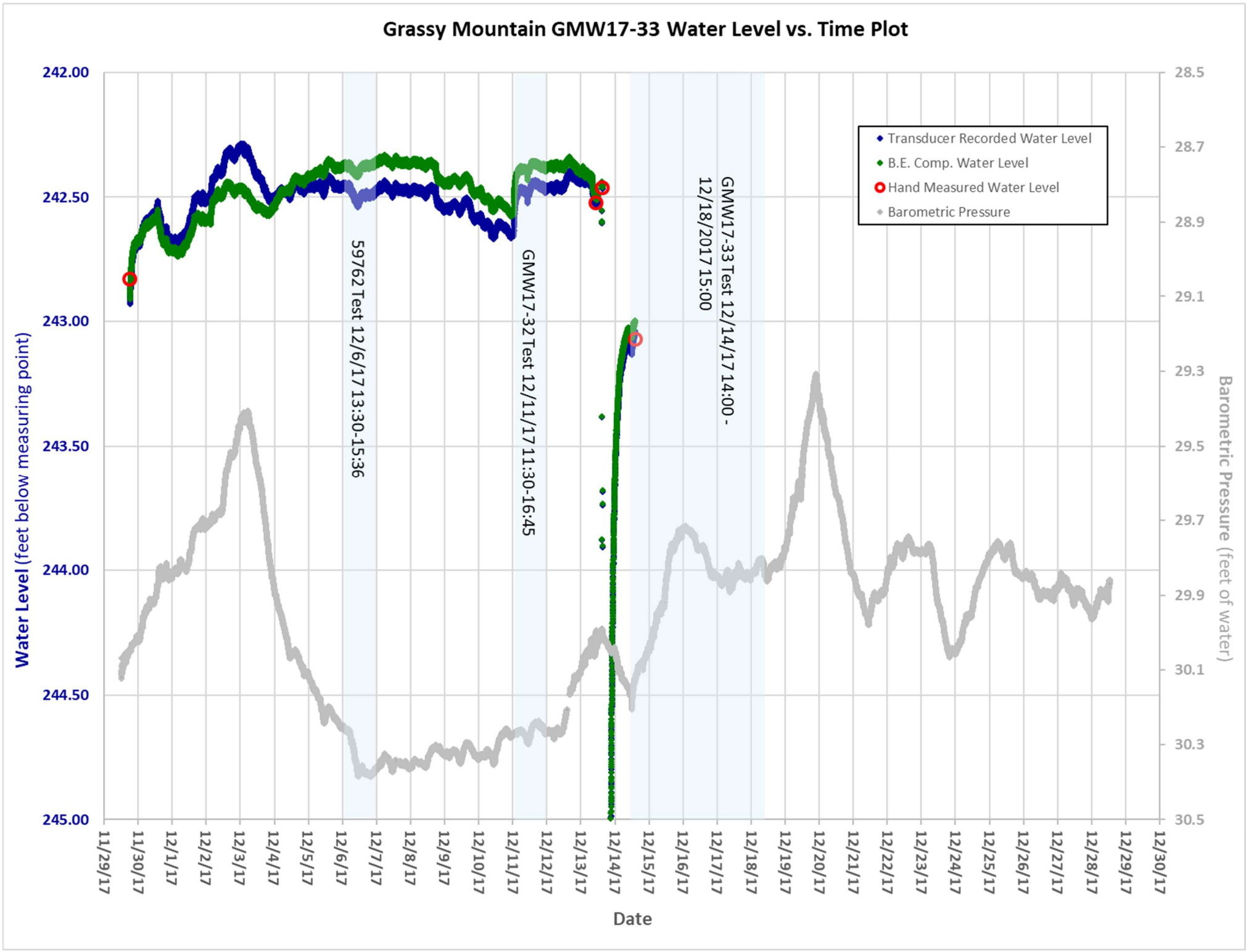
12/29/17
12/30/17
Date


Grassy Mountain GMW17-33 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
242.00
242.50
243.00
243.50
244.00
244.50
245.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/29/17
11/30/17
12/1/17
12/2/17
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12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
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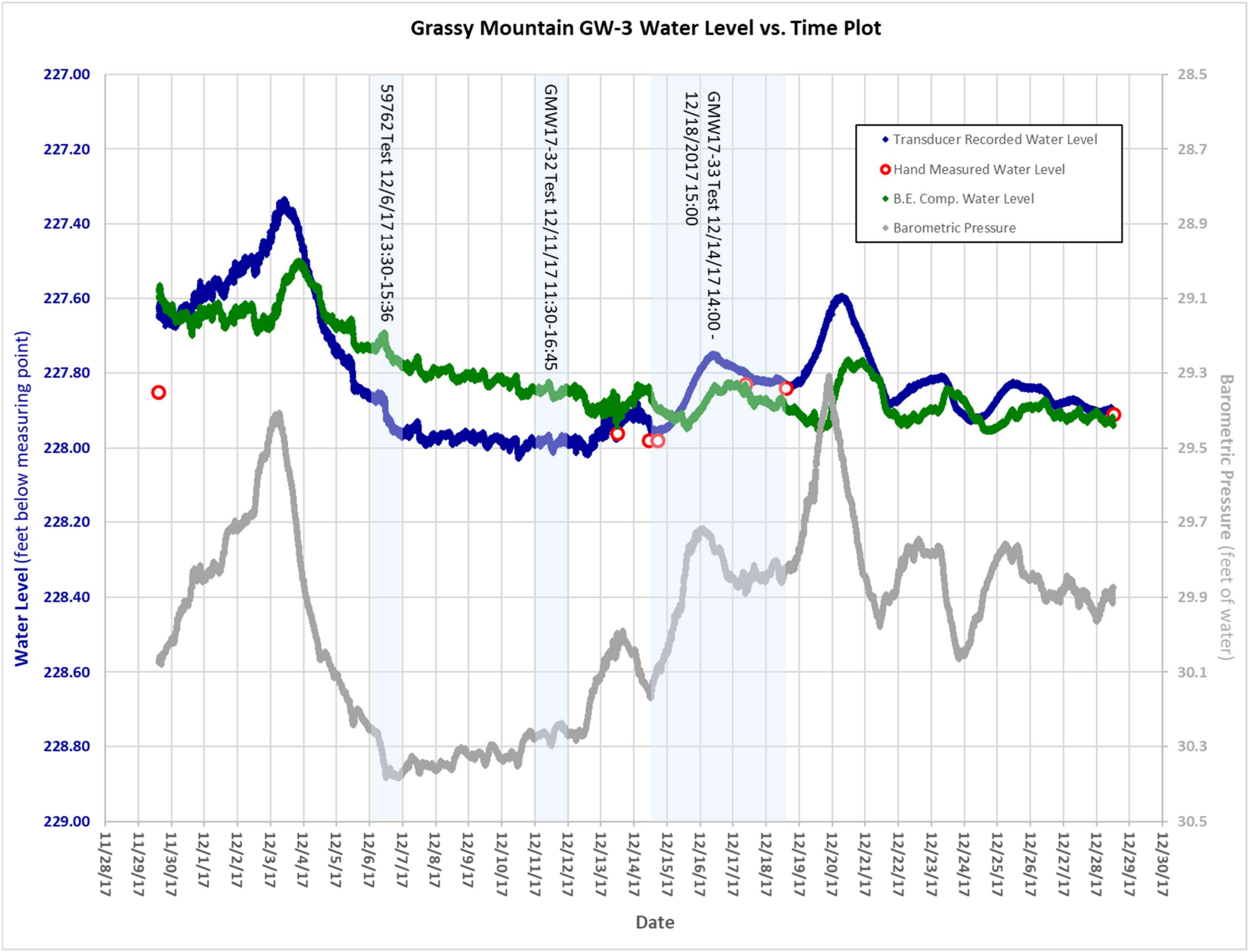
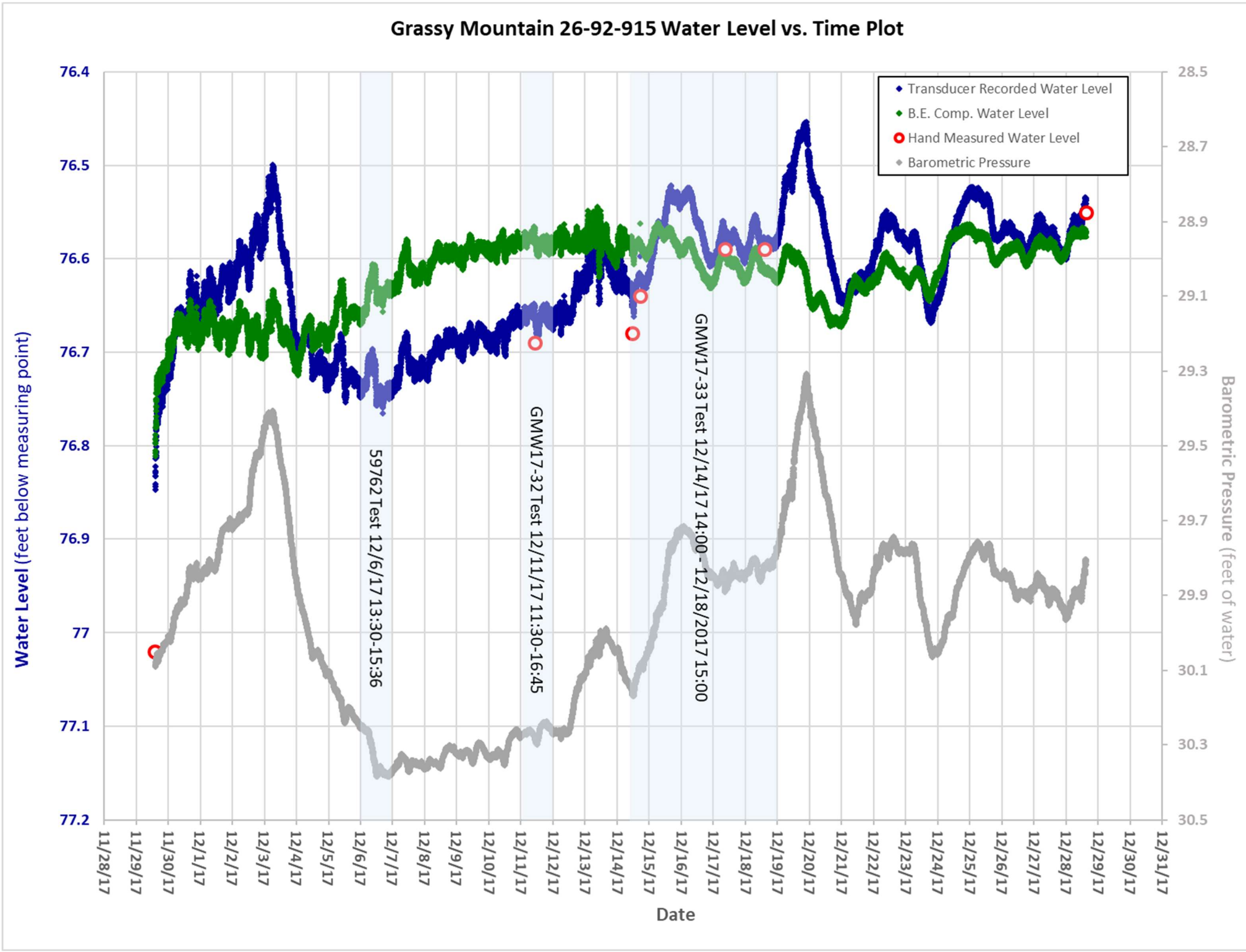
12/29/17
12/30/17


Grassy Mountain GW-3 Water Level vs. Time Plot
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
Hand Measured Water Level
B.E. Comp. Water Level
Barometric Pressure
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
227.00
227.20
227.40
227.60
227.80
228.00
228.20
228.40
228.60
228.80
229.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
12/24/17
12/25/17
12/26/17
12/27/17
12/28/17
12/29/17
12/30/17


Grassy Mountain 26-92-915 Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
GMW17-32 Test 12/11/17 11:30-16:45
59762 Test 12/6/17 13:30-15:36
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
76.4
76.5
76.6
76.7
76.8
76.9
77
77.1
77.2
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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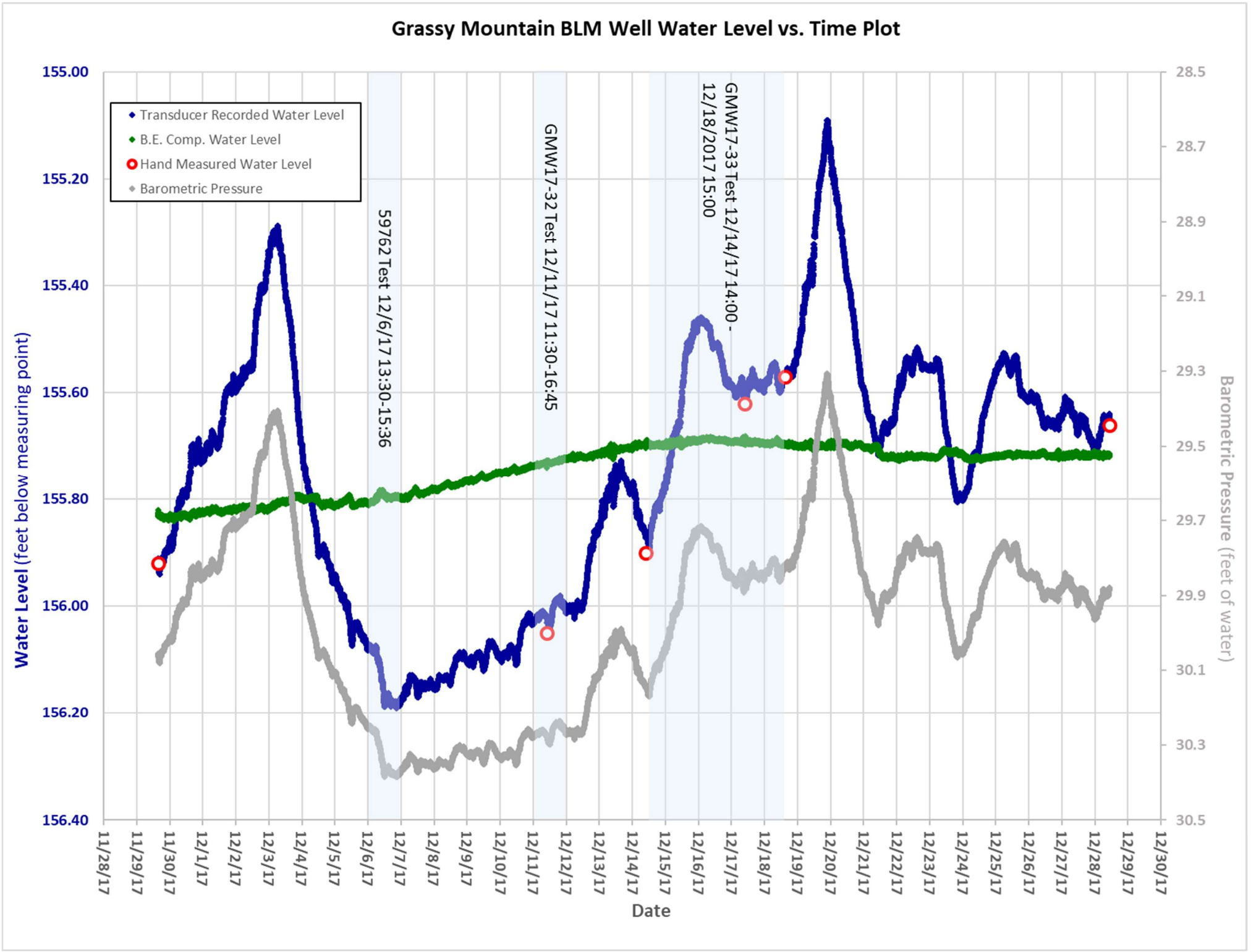
12/26/17
12/27/17
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain BLM Well Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
155.00
155.20
155.40
155.60
155.80
156.00
156.20
156.40
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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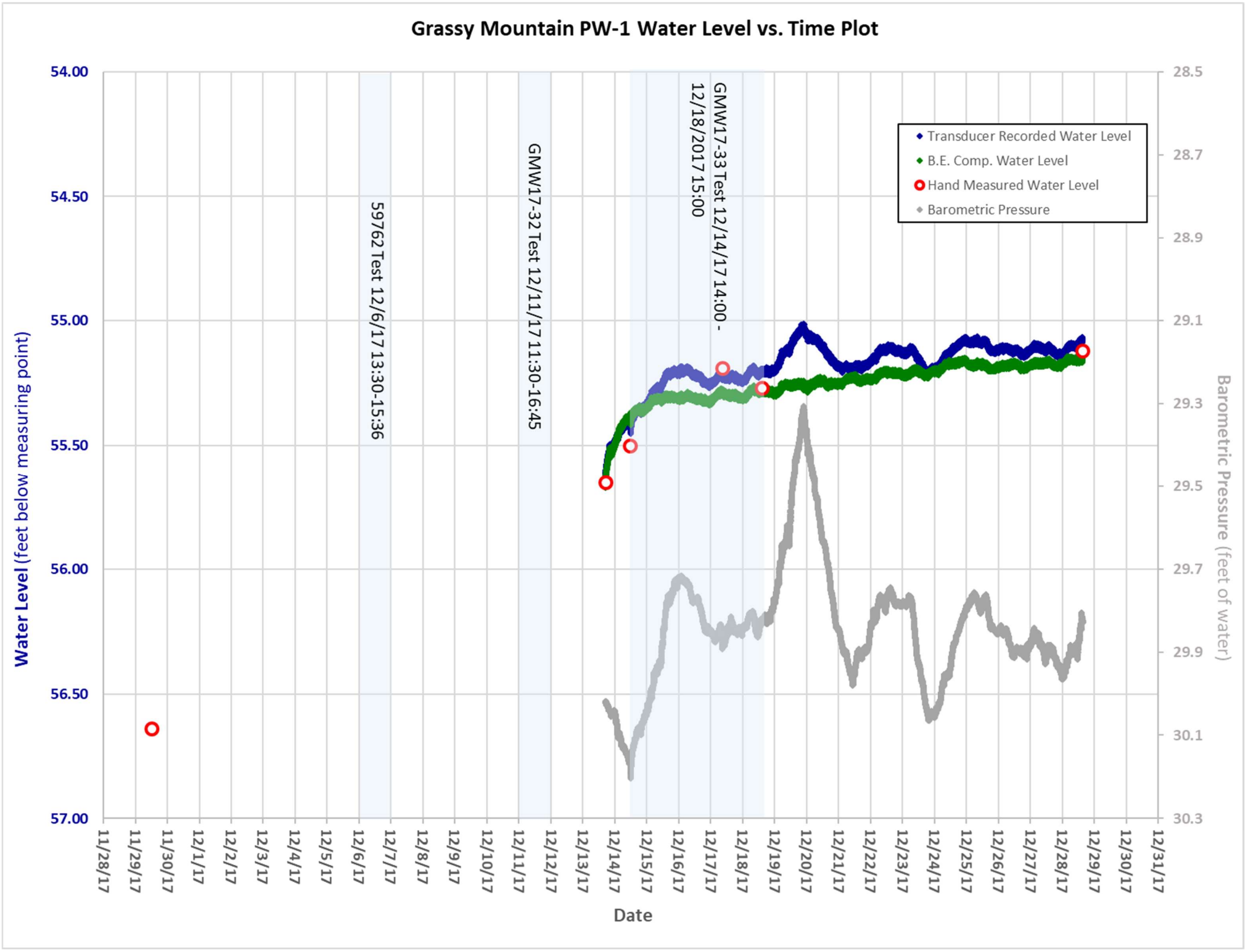
12/28/17
12/29/17
12/30/17


Grassy Mountain PW-1 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
54.00
54.50
55.00
55.50
56.00
56.50
57.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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12/26/17
12/27/17
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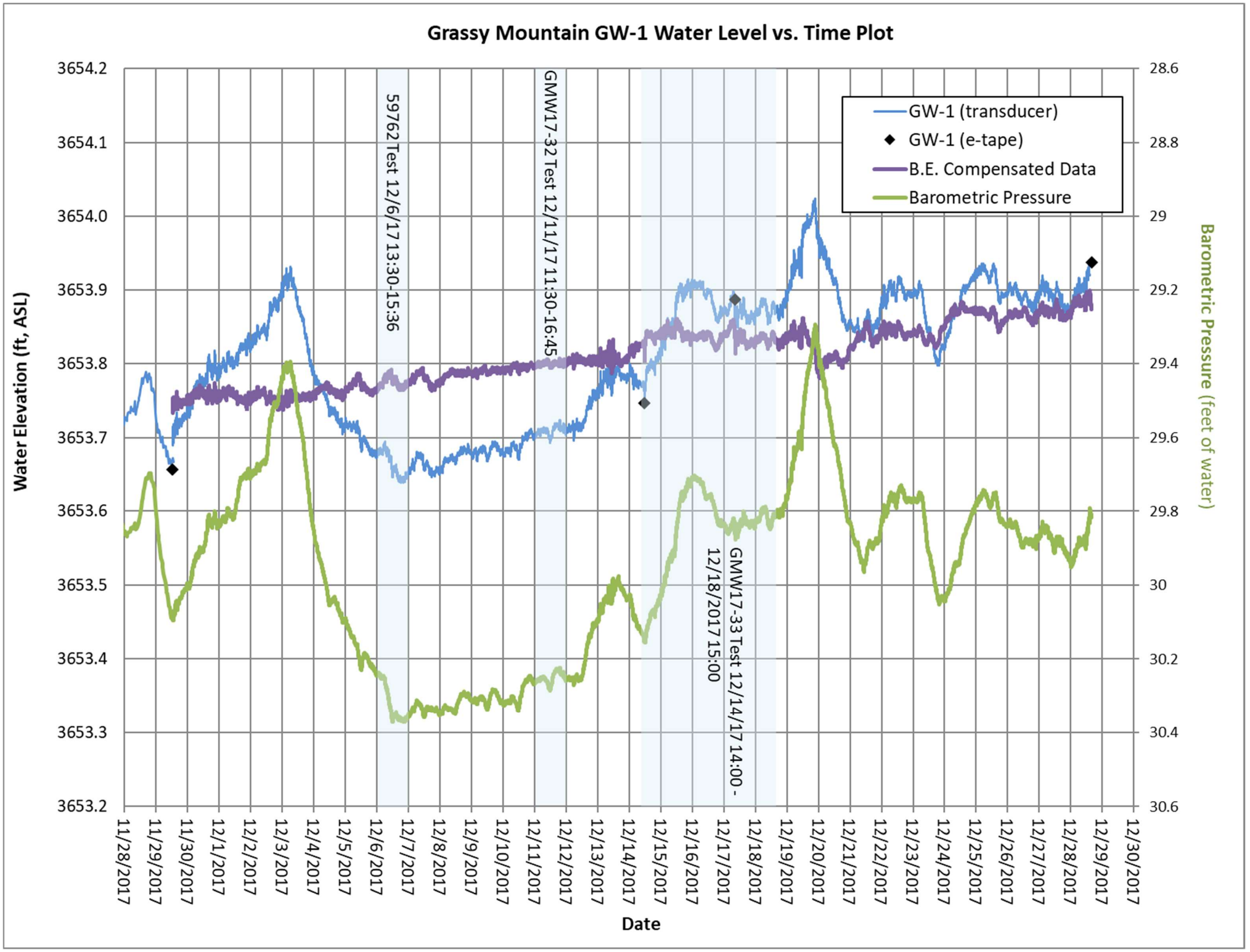
12/29/17
12/30/17
12/31/17


Grassy Mountain GW-1 Water Level vs. Time Plot
Water Elevation (ft, ASL)
Barometric Pressure (feet of water)
Date
GW-1 (transducer)
GW-1 (e-tape)
B.E. Compensated Data
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
3654.2
3654.1
3654.0
3653.9
3653.8
3653.7
3653.6
3653.5
3653.4
3653.3
3653.2
28.6
28.8
29
29.2
29.4
29.6
29.8
30
30.2
30.4
30.6
11/28/2017
11/29/2017
11/30/2017
12/1/2017
12/2/2017
12/3/2017
12/4/2017
12/5/2017
12/6/2017
12/7/2017
12/8/2017
12/9/2017
12/10/2017
12/11/2017
12/12/2017
12/13/2017
12/14/2017
12/15/2017
12/16/2017
12/17/2017
12/18/2017
12/19/2017
12/20/2017
12/21/2017
12/22/2017
12/23/2017
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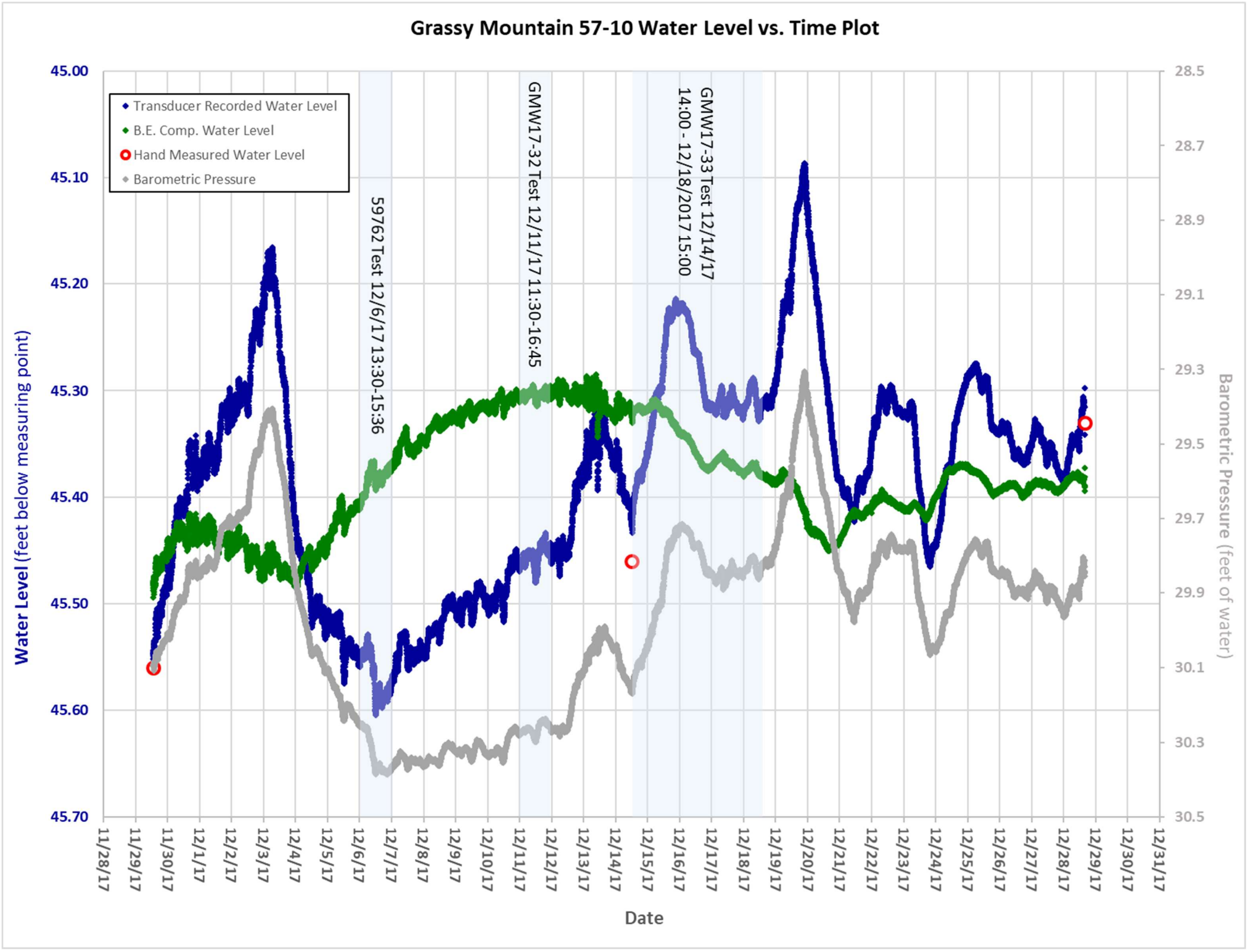
12/28/2017
12/29/2017
12/30/2017


Grassy Mountain 57-10 Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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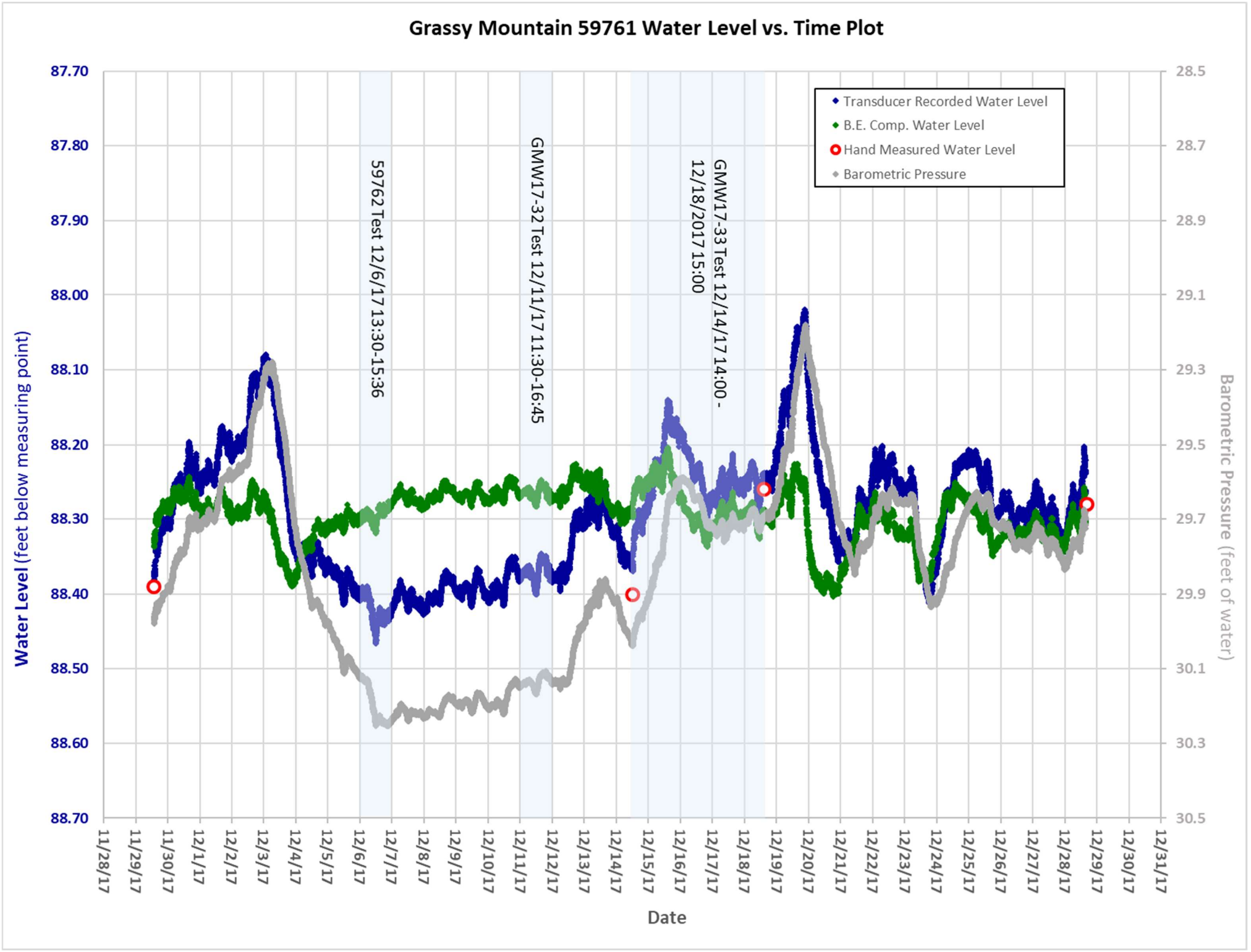
12/27/17
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain 59761 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
87.70
87.80
87.90
88.00
88.10
88.20
88.30
88.40
88.50
88.60
88.70
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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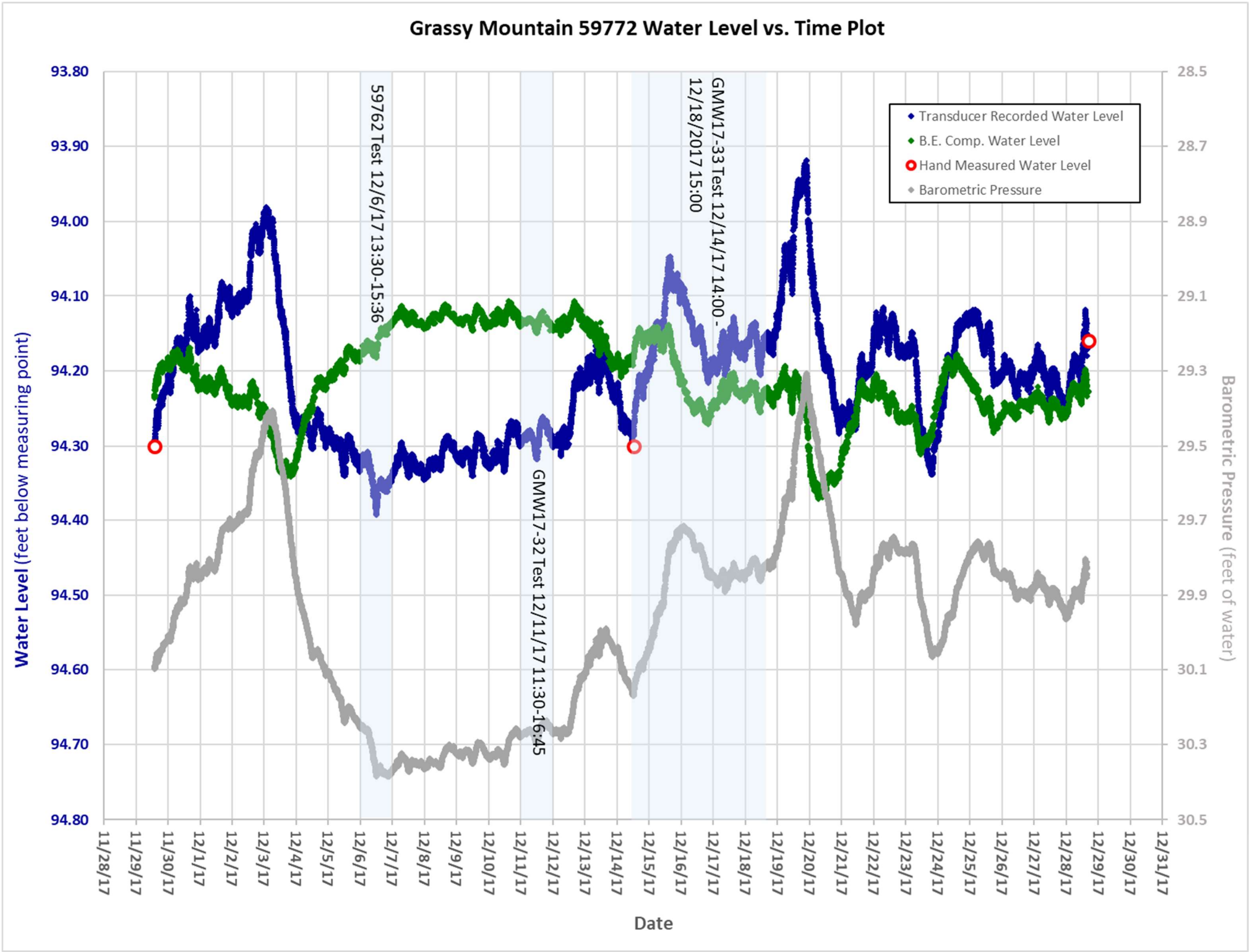
12/26/17
12/27/17
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain 59772 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
93.80
93.90
94.00
94.10
94.20
94.30
94.40
94.50
94.60
94.70
94.80
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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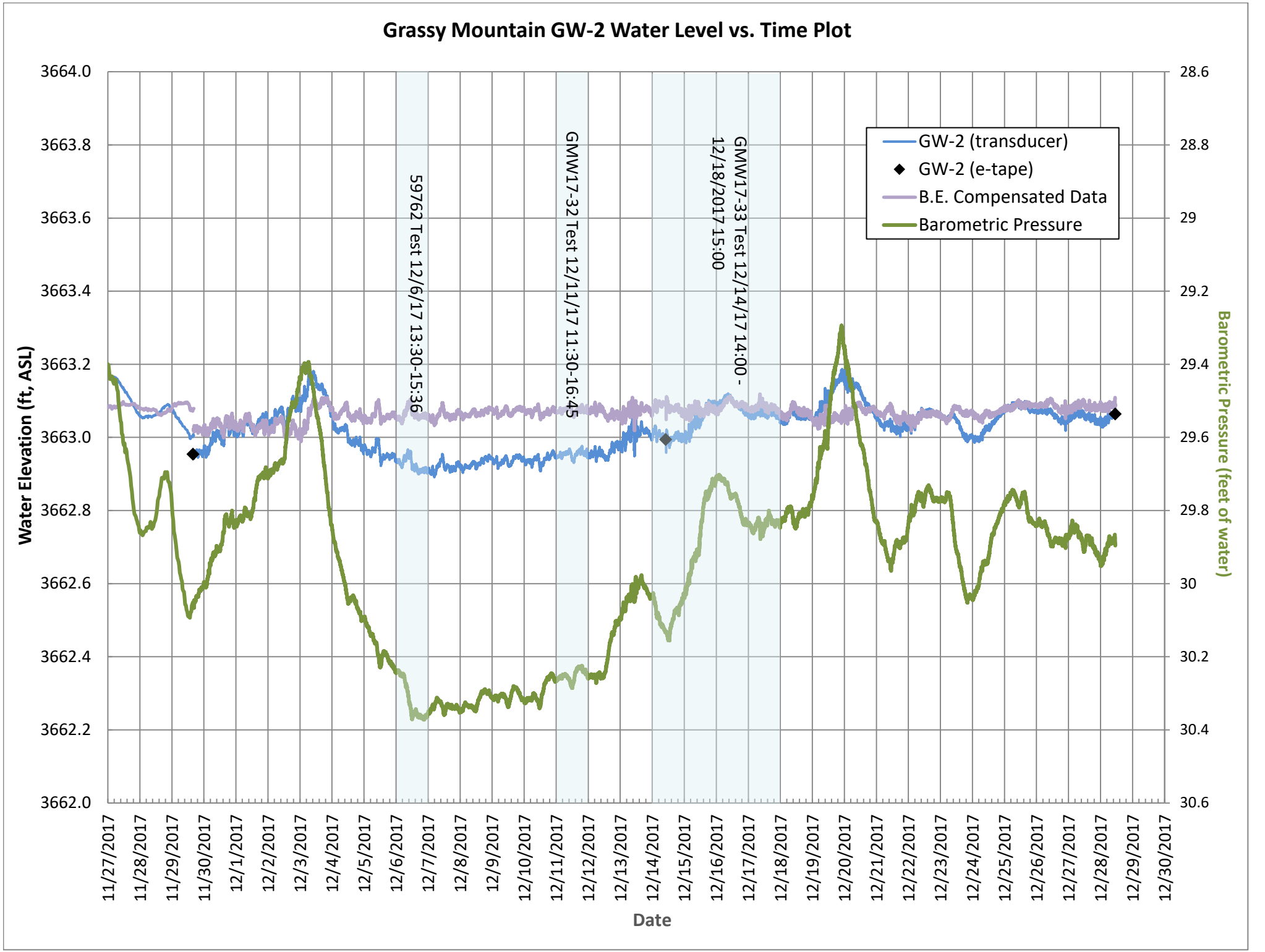
12/27/17
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain GW-2 Water Level vs. Time Plot
Water Elevation (ft, ASL)
Barometric Pressure (feet of water)
Date
GW-2 (transducer)
GW-2 (e-tape)
B.E. Compensated Data
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
3664.0
3663.8
3663.6
3663.4
3663.2
3663.0
3662.8
3662.6
3662.4
3662.2
3662.0
28.6
28.8
29
29.2
29.4
29.6
29.8
30
30.2
30.4
30.6
11/27/2017
11/28/2017
11/29/2017
11/30/2017
12/1/2017
12/2/2017
12/3/2017
12/4/2017
12/5/2017
12/6/2017
12/7/2017
12/8/2017
12/9/2017
12/10/2017
12/11/2017
12/12/2017
12/13/2017
12/14/2017
12/15/2017
12/16/2017
12/17/2017
12/18/2017
12/19/2017
12/20/2017
12/21/2017
12/22/2017
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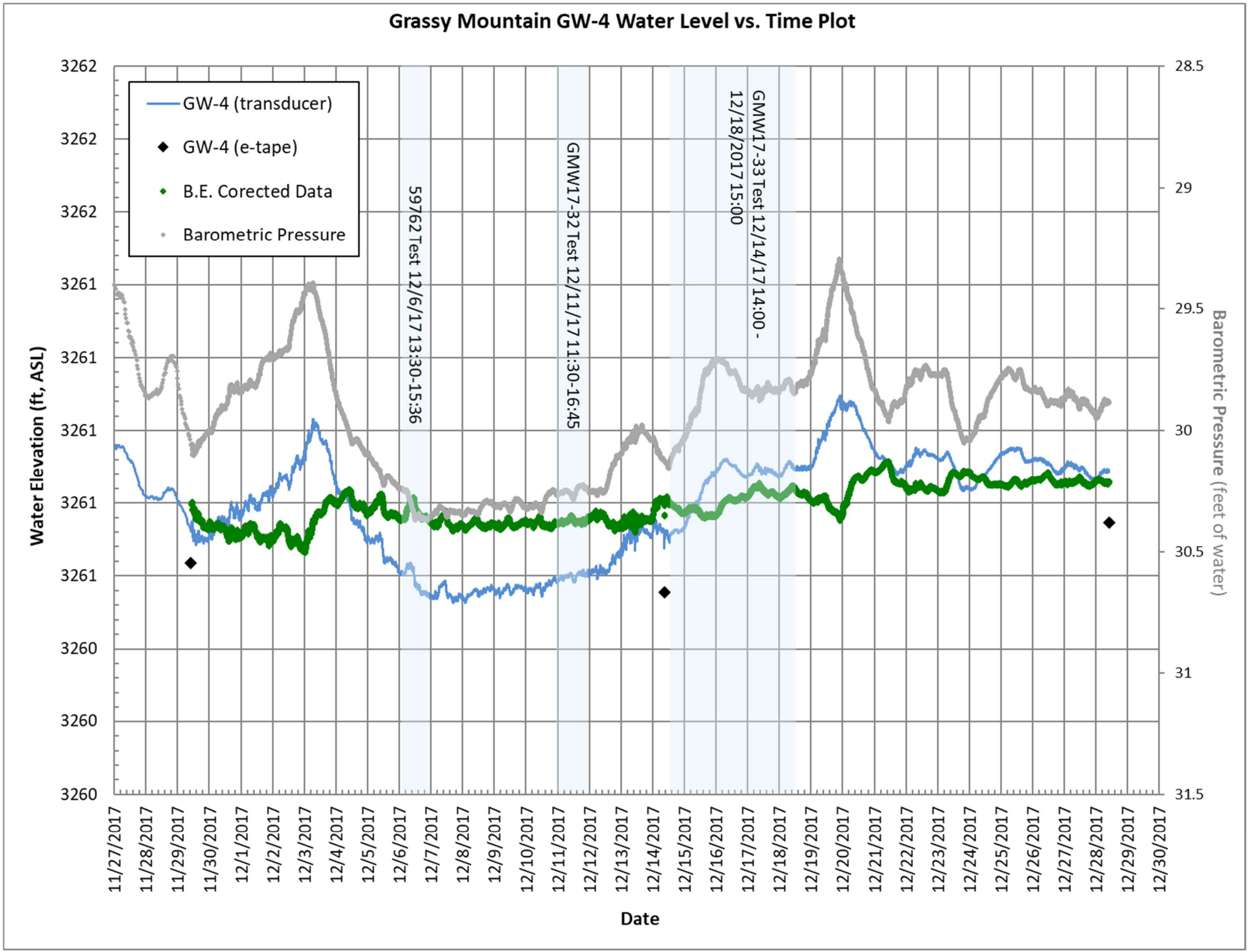
12/28/2017
12/29/2017
12/30/2017


Grassy Mountain GW-4 Water Level vs. Time Plot
GW-4 (transducer)
GW-4 (e-tape)
B.E. Corected Data
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Elevation (ft, ASL)
Barometric Pressure (feet of water)
Date
3262
3262
3262
3261
3261
3261
3261
3261
3260
3260
3260
28.5
29
29.5
30
30.5
31
31.5
11/27/2017
11/28/2017
11/29/2017
11/30/2017
12/1/2017
12/2/2017
12/3/2017
12/4/2017
12/5/2017
12/6/2017
12/7/2017
12/8/2017
12/9/2017
12/10/2017
12/11/2017
12/12/2017
12/13/2017
12/14/2017
12/15/2017
12/16/2017
12/17/2017
12/18/2017
12/19/2017
12/20/2017
12/21/2017
12/22/2017
12/23/2017
12/24/2017
12/25/2017
12/26/2017
12/27/2017
12/28/2017
12/29/2017
12/30/2017

Attachment F
Water Quality Results

Analytes in mg/L unless noted. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.		GMW17-33
Analytes	**MCL**	**12/14/17**
Aluminum, dissolved	**0.05**	<0.03
Aluminum, total	**0.05**	<0.03
Antimony, dissolved	**0.006**	**0.0217**
Antimony, total	**0.006**	**0.0244**
Arsenic, dissolved	**0.010**	**0.106**
Arsenic, total	**0.010**	**0.107**
Barium, dissolved	**2**	0.005
Barium, total	**2**	0.008
Beryllium, dissolved	**0.004**	0.00007
Beryllium, total	**0.004**	0.00007
Bicarbonate as CaCO3	NA	104
Bismuth, dissolved	NA	<0.04
Bismuth, total	NA	<0.04
Boron, dissolved	NA	0.14
Boron, total	NA	0.13
Cadmium, dissolved	**0.005**	<0.0001
Cadmium, total	**0.005**	<0.0001
Calcium, dissolved	NA	22.8
Calcium, total	NA	24.1
Carbonate as CaCO3	NA	<2
Chloride	**250**	10.1
Chromium, dissolved	**0.1**	<0.0005
Chromium, total	**0.1**	<0.0005
Cobalt, dissolved	NA	0.0007
Cobalt, total	NA	0.00072
Conductivity @25C (umhos/cm)	NA	477
Copper, dissolved	**1.3**	0.0006
Copper, total	**1.3**	0.0005
Cyanide, total	**0.2**	<0.003
Cyanide, WAD	**0.2**	<0.003
Fluoride	4	2.01
Gallium, dissolved	NA	<0.1
Gallium, total	NA	<0.1
Hardness as CaCO3	NA	
Hardness as CaCO3 (dissolved)	NA	72
Hardness as CaCO3 (total)	NA	
Hydroxide as CaCO3	NA	<2
Iron, dissolved	**0.3**	<0.02
Iron, total	**0.3**	<0.02
Lead, dissolved	**0.015**	0.0001
Lead, total	**0.015**	0.0002
Lithium, dissolved	NA	0.086
Lithium, total	NA	0.08
Magnesium, dissolved	NA	3.7
Magnesium, total	NA	3.7
Manganese, dissolved	**0.05**	0.0453
Manganese, total	**0.05**	0.05
Mercury, dissolved (ng/L)	**2000**	4.1

Analytes in mg/L unless noted. If result is <#, it is less than the MDL. If the result is blank, it was not tested. **Bold** results are over secondary MCL. **Red bold** results are over primary MCL.		GMW17-33
Analytes	**MCL**	**12/14/17**
Mercury, total (ng/L)	**2000**	11.5
Molybdenum, dissolved	NA	0.0171
Molybdenum, total	NA	0.0173
Nickel, dissolved	NA	0.0009
Nickel, total	NA	0.0009
Nitrate as N, dissolved	**10**	
Nitrate/Nitrite as N	**10**	1.46
Nitrate/Nitrite as N, dissolved	**10**	
Nitrite as N, dissolved	**1**	
Nitrogen, ammonia	NA	<0.05
pH (standard units)	NA	8.1
pH measured at (°C)	NA	21.5
Phosphorus, total	NA	0.1
Potassium, dissolved	NA	4.2
Potassium, total	NA	4.3
Total Dissolved Solids	**500**	280
Total Suspended Solids	NA	<5
Scandium, dissolved	NA	<0.1
Scandium, total	NA	<0.1
Selenium, dissolved	**0.05**	0.0105
Selenium, total	**0.05**	0.0106
Silver, dissolved	**0.10**	<0.00005
Silver, total	**0.10**	<0.00005
Sodium, dissolved	NA	62.9
Sodium, total	NA	63.7
Strontium, dissolved	NA	0.198
Strontium, total	NA	0.198
Sulfate	**250**	86.4
Thallium, dissolved	NA	0.0001
Thallium, total	NA	0.0001
Tin, dissolved	NA	<0.0001
Tin, total	NA	<0.0001
Titanium, dissolved	NA	0.006
Titanium, total	NA	<0.005
Total Alkalinity	NA	104
Uranium, dissolved	**0.030**	0.0007
Uranium, total	**0.030**	0.0007
Vanadium, dissolved	NA	0.0102
Vanadium, total	NA	0.0105
Zinc, dissolved	**5**	0.01
Zinc, total	**5**	0.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 05, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

cc: Kurt Newbry

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41826

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 16, 2017. This project has been assigned to ACZ's project number, L41826. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L41826. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 04, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/27/17 14:03	wtc
Cyanide, WAD	SM4500-CN I- distillation								12/27/17 12:18	las
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/20/17 15:59	kea
Total Hot Plate Digestion	M200.2 ICP-MS								12/27/17 17:00	msh
Total Hot Plate Digestion	M200.2 ICP								12/27/17 13:36	dcm/scp

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U		mg/L	0.03	0.2	12/21/17 19:20	aeh
Aluminum, total	M200.7 ICP	1		U		mg/L	0.03	0.2	01/03/18 1:57	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.0217			mg/L	0.0004	0.002	12/28/17 20:29	msh
Antimony, total	M200.8 ICP-MS	1	0.0244			mg/L	0.0004	0.002	12/29/17 15:09	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.106			mg/L	0.0002	0.001	12/28/17 20:29	msh
Arsenic, total	M200.8 ICP-MS	1	0.107			mg/L	0.0002	0.001	12/29/17 15:09	mfm
Barium, dissolved	M200.7 ICP	1	0.005	B		mg/L	0.003	0.02	12/22/17 20:36	dcm
Barium, total	M200.7 ICP	1	0.008	B		mg/L	0.003	0.02	01/03/18 19:24	aeh
Beryllium, dissolved	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/28/17 20:29	msh
Beryllium, total	M200.8 ICP-MS	1	0.00007	B		mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/21/17 19:20	aeh
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	01/03/18 1:57	aeh
Boron, dissolved	M200.7 ICP	1	0.14			mg/L	0.01	0.05	12/21/17 19:20	aeh
Boron, total	M200.7 ICP	1	0.13			mg/L	0.01	0.05	01/03/18 1:57	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Calcium, dissolved	M200.7 ICP	1	22.8			mg/L	0.1	0.5	12/21/17 19:20	aeh
Calcium, total	M200.7 ICP	1	24.1			mg/L	0.1	0.5	01/03/18 1:57	aeh
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/28/17 20:29	msh
Chromium, total	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	12/29/17 15:09	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	0.0007			mg/L	0.00005	0.0003	12/28/17 20:29	msh
Cobalt, total	M200.8 ICP-MS	1	0.00072			mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Copper, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0004	0.002	12/28/17 20:29	msh
Copper, total	M200.8 ICP-MS	1	0.0005	B	*	mg/L	0.0004	0.002	12/29/17 15:09	mfm
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/21/17 19:20	aeh
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	01/03/18 19:24	aeh
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	12/21/17 19:20	aeh
Iron, total	M200.7 ICP	1		U		mg/L	0.02	0.05	01/03/18 1:57	aeh
Lead, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Lead, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Lithium, dissolved	M200.7 ICP	1	0.086			mg/L	0.008	0.04	12/21/17 19:20	aeh
Lithium, total	M200.7 ICP	1	0.080			mg/L	0.008	0.04	01/03/18 1:57	aeh
Magnesium, dissolved	M200.7 ICP	1	3.7			mg/L	0.2	1	12/21/17 19:20	aeh
Magnesium, total	M200.7 ICP	1	3.7			mg/L	0.2	1	01/03/18 1:57	aeh
Manganese, dissolved	M200.8 ICP-MS	1	0.0453			mg/L	0.0004	0.002	12/28/17 20:29	msh
Manganese, total	M200.8 ICP-MS	1	0.050		*	mg/L	0.0004	0.002	12/29/17 15:09	mfm
Mercury, dissolved	M1631, Atomic Fluorescence	1	4.1			ng/L	0.2	0.5	12/21/17 11:51	mfm
Mercury, total	M1631, Atomic Fluorescence	1	11.5			ng/L	0.2	0.5	12/21/17 14:02	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0171			mg/L	0.0005	0.003	12/28/17 20:29	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0173			mg/L	0.0005	0.003	12/29/17 15:09	mfm
Nickel, dissolved	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	12/28/17 20:29	msh
Nickel, total	M200.8 ICP-MS	1	0.0009	B		mg/L	0.0006	0.003	12/29/17 15:09	mfm
Potassium, dissolved	M200.7 ICP	1	4.2			mg/L	0.2	1	12/21/17 19:20	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	4.3			mg/L	0.2	1	01/03/18 1:57	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/21/17 19:20	aeh
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	01/03/18 1:57	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0105			mg/L	0.0001	0.0003	12/28/17 20:29	msh
Selenium, total	M200.8 ICP-MS	1	0.0106			mg/L	0.0001	0.0003	12/29/17 15:09	mfm
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/28/17 20:29	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/29/17 15:09	mfm
Sodium, dissolved	M200.7 ICP	1	62.9			mg/L	0.2	1	12/21/17 19:20	aeh
Sodium, total	M200.7 ICP	1	63.7			mg/L	0.2	1	01/03/18 1:57	aeh
Strontium, dissolved	M200.7 ICP	1	0.198			mg/L	0.005	0.03	12/21/17 19:20	aeh
Strontium, total	M200.7 ICP	1	0.198			mg/L	0.005	0.03	01/03/18 1:57	aeh
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 20:29	msh
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/28/17 20:29	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Titanium, dissolved	M200.7 ICP	1	0.006	B		mg/L	0.005	0.03	12/21/17 19:20	aeh
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	01/03/18 1:57	aeh
Uranium, dissolved	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	12/28/17 20:29	msh
Uranium, total	M200.8 ICP-MS	1	0.0007			mg/L	0.0001	0.0005	12/29/17 15:09	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	0.0102			mg/L	0.0002	0.001	12/28/17 20:29	msh
Vanadium, total	M200.8 ICP-MS	1	0.0105			mg/L	0.0002	0.001	12/29/17 15:09	mfm
Zinc, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	12/22/17 20:36	dcm
Zinc, total	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	01/03/18 1:57	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-33

ACZ Sample ID: ***L41826-01***
Date Sampled: *12/14/17 16:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	104			mg/L	2	20	12/22/17 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	12/22/17 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	12/22/17 0:00	emk
Total Alkalinity		1	104		*	mg/L	2	20	12/22/17 0:00	emk
Chloride	M300.0 - Ion Chromatography	1	10.1			mg/L	0.4	2	12/28/17 23:54	las
Conductivity @25C	SM2510B	1	477			umhos/cm	1	10	12/22/17 16:05	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/27/17 18:11	wtc
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/27/17 18:44	wtc
Fluoride	M300.0 - Ion Chromatography	1	2.01			mg/L	0.05	0.25	12/28/17 23:54	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		72			mg/L	0.2	5	01/05/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	1.46			mg/L	0.02	0.1	12/23/17 0:49	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1		U		mg/L	0.05	0.2	12/29/17 11:14	wtc
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	12/22/17 0:00	emk
pH measured at		1	21.5			C	0.1	0.1	12/22/17 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.10		*	mg/L	0.02	0.05	12/22/17 0:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	280			mg/L	10	20	12/18/17 14:19	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1		U	*	mg/L	5	20	12/20/17 16:18	enb
Sulfate	M300.0 - Ion Chromatography	1	86.4			mg/L	0.4	2	12/28/17 23:54	las

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: TRIP BLANK

ACZ Sample ID: ***L41826-02***
Date Sampled: *12/14/17 00:00*
Date Received: *12/16/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 14:07	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L41826***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847PBW1	PBW	12/22/17 15:08				U	mg/L		-20	20			
WG438847LCSW3	LCSW	12/22/17 15:24	WC171214-1	820.0001		783	mg/L	95	90	110			
L41831-01DUP	DUP	12/22/17 16:39			U	U	mg/L				0	20	RA
WG438847LCSW6	LCSW	12/22/17 18:28	WC171214-1	820.0001		790	mg/L	96	90	110			
WG438847PBW2	PBW	12/22/17 18:36				3.6	mg/L		-20	20			
WG438847LCSW9	LCSW	12/22/17 21:18	WC171214-1	820.0001		797	mg/L	97	90	110			
WG438847PBW3	PBW	12/22/17 21:26				3.7	mg/L		-20	20			
WG438847LCSW12	LCSW	12/22/17 23:43	WC171214-1	820.0001		795	mg/L	97	90	110			
WG438847PBW4	PBW	12/22/17 23:51				4	mg/L		-20	20			
WG438847LCSW15	LCSW	12/23/17 1:08	WC171214-1	820.0001		802	mg/L	98	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.936	mg/L	97	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.09	0.09			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.0019		1.008	mg/L	101	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.0019	U	1.045	mg/L	104	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.0019	U	1.053	mg/L	105	85	115	1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.901	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.09	0.09			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.066	0.066			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.0019		1.007	mg/L	101	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.0019	.3	1.394	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.0019	.3	1.372	mg/L	107	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02		.02042	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.01		.00921	mg/L	92	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.01	U	.00946	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.01	U	.00951	mg/L	95	70	130	1	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02		.01947	mg/L	97	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.01		.01091	mg/L	109	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.01	U	.01007	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.01	U	.0111	mg/L	111	70	130	10	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05057	mg/L	101	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0006	0.0006			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04729	mg/L	94	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0004	.05031	mg/L	100	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0004	.0502	mg/L	99	70	130	0	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05035	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0006	0.0006			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00044	0.00044			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05192	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.0013	.0533	mg/L	104	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.0013	.05318	mg/L	104	70	130	0	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438843													
WG438843ICV	ICV	12/22/17 19:15	II171220-1	2		1.9558	mg/L	98	95	105			
WG438843ICB	ICB	12/22/17 19:20				U	mg/L		-0.009	0.009			
WG438843LFB	LFB	12/22/17 19:33	II171220-5	.5015		.5082	mg/L	101	85	115			
L37475-30AS	AS	12/22/17 20:18	II171220-5	.5015	.027	.5316	mg/L	101	85	115			
L37475-30ASD	ASD	12/22/17 20:21	II171220-5	.5015	.027	.5392	mg/L	102	85	115	1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439247													
WG439247ICV	ICV	01/03/18 18:29	II171206-1	2		2.0532	mg/L	103	95	105			
WG439247ICB	ICB	01/03/18 18:35				U	mg/L		-0.009	0.009			
WG438891LRB	LRB	01/03/18 18:47				U	mg/L		-0.0066	0.0066			
WG438891LFB	LFB	01/03/18 18:51	II171220-5	.5015		.5306	mg/L	106	85	115			
L41819-02LFM	LFM	01/03/18 19:12	II171220-5	.5015	.035	.5579	mg/L	104	70	130			
L41819-02LFMD	LFMD	01/03/18 19:15	II171220-5	.5015	.035	.5507	mg/L	103	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.047181	mg/L	94	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05035		.046128	mg/L	92	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05035	U	.047913	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05035	U	.047046	mg/L	93	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04729	mg/L	95	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05035		.0504	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05035	.0425	.09626	mg/L	107	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05035	.0425	.09778	mg/L	110	70	130	2	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.975	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.12	0.12			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.9993		.985	mg/L	99	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.9993	U	.984	mg/L	98	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.9993	U	1.014	mg/L	101	85	115	3	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.938	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.12	0.12			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.088	0.088			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.9993		1.005	mg/L	101	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.9993	U	1.033	mg/L	103	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.9993	U	.999	mg/L	100	70	130	3	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.965	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				.016	mg/L		-0.03	0.03			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.5005		.497	mg/L	99	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.5005	.01	.511	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.5005	.01	.518	mg/L	101	85	115	1	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.991	mg/L	100	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.03	0.03			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.022	0.022			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.5005		.503	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.5005	.19	.687	mg/L	99	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.5005	.19	.696	mg/L	101	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05007	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04636	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	U	.04704	mg/L	94	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	U	.0472	mg/L	94	70	130	0	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04971	mg/L	99	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05124	mg/L	102	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0715	.12308	mg/L	103	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0715	.12302	mg/L	103	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		98.09	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	68.03333		66.64	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	68.03333	44.5	110.1	mg/L	96	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	68.03333	44.5	111	mg/L	98	85	115	1	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		99.34	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	68.03333		69.79	mg/L	103	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	68.03333	233	315.5	mg/L	121	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	68.03333	233	304.6	mg/L	105	70	130	4	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	20.06		20.2	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.8	mg/L	99	90	110			
L41826-01DUP	DUP	12/29/17 0:12			10.1	10	mg/L				1	20	
L41828-01AS	AS	12/29/17 0:48	WI171110-4	6006	158	6220	mg/L	101	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		30.5	mg/L	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L41826***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05134	mg/L	103	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0015	0.0015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05		.04634	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05	U	.04867	mg/L	97	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05	U	.04875	mg/L	98	70	130	0	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05046	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0015	0.0015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.0011	0.0011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05		.0502	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05	.006	.055	mg/L	98	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05	.006	.0537	mg/L	95	70	130	2	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.052407	mg/L	105	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04648	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.00019	.046732	mg/L	93	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.00019	.047001	mg/L	94	70	130	1	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05254	mg/L	105	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.0524	mg/L	105	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.3098	.3596	mg/L	100	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.3098	.36	mg/L	100	70	130	0	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847LCSW2	LCSW	12/22/17 15:13	PCN54306	1410		1450	umhos/cm	103	90	110			
L41831-01DUP	DUP	12/22/17 16:39			24900	24800	umhos/cm				0	20	
WG438847LCSW5	LCSW	12/22/17 18:17	PCN54306	1410		1440	umhos/cm	102	90	110			
WG438847LCSW8	LCSW	12/22/17 21:06	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438847LCSW11	LCSW	12/22/17 23:32	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438847LCSW14	LCSW	12/23/17 0:57	PCN54306	1410		1410	umhos/cm	100	90	110			

SPF Water Engineering

ACZ Project ID: ***L41826***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05309	mg/L	106	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0491		.04767	mg/L	97	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0491	.01	.05801	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0491	.01	.05774	mg/L	97	70	130	0	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05096	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0491		.05095	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0491	54.6	53.58	mg/L	-2077	70	130			M3
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0491	54.6	53.36	mg/L	-2525	70	130	0	20	M3

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438950													
WG438950ICV	ICV	12/27/17 17:57	WI171213-6	.3006		.3125	mg/L	104	90	110			
WG438950ICB	ICB	12/27/17 17:58				U	mg/L		-0.003	0.003			
WG438913LRB	LRB	12/27/17 17:59				U	mg/L		-0.003	0.003			
WG438913LFB	LFB	12/27/17 17:59	WI171220-3	.2		.1873	mg/L	94	90	110			
L41823-01DUP	DUP	12/27/17 18:03			.005	U	mg/L				200	20	RA
L41820-01LFM	LFM	12/27/17 18:10	WI171220-3	.2	18.6	18.14	mg/L	-230	90	110			M3

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438950													
WG438950ICV	ICV	12/27/17 17:57	WI171213-6	.3006		.3125	mg/L	104	90	110			
WG438950ICB	ICB	12/27/17 17:58				U	mg/L		-0.003	0.003			
WG438951													
WG438894LRB	LRB	12/27/17 18:42				U	mg/L		-0.003	0.003			
WG438894LFB	LFB	12/27/17 18:43	WI171213-2	.2004		.2023	mg/L	101	90	110			
L41826-01DUP	DUP	12/27/17 18:45			U	U	mg/L				0	20	RA
L41855-01LFM	LFM	12/27/17 18:47	WI171213-2	.2004	U	.199	mg/L	99	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	3.996		4.03	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.05	0.05			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	1.5		1.49	mg/L	99	90	110			
L41826-01DUP	DUP	12/29/17 0:12			2.01	2.01	mg/L				0	20	
L41828-01AS	AS	12/29/17 0:48	WI171110-4	300	852	1170	mg/L	106	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	1.5		1.49	mg/L	99	90	110			

SPF Water Engineering

ACZ Project ID: ***L41826***

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.98	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1		.98	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1	U	1.02	mg/L	102	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1	U	1.06	mg/L	106	85	115	4	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439247													
WG439247ICV	ICV	01/03/18 18:29	II171206-1	2		2.09	mg/L	105	95	105			
WG439247ICB	ICB	01/03/18 18:35				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 18:47				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 18:51	II171220-5	1		1.09	mg/L	109	85	115			
L41819-02LFM	LFM	01/03/18 19:12	II171220-5	1	U	1.09	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 19:15	II171220-5	1	U	1.07	mg/L	107	70	130	2	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.925	mg/L	96	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.06	0.06			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.0011		1.004	mg/L	100	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.0011	.03	1.039	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.0011	.03	1.052	mg/L	102	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.901	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.06	0.06			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.044	0.044			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.0011		1.002	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.0011	.45	1.462	mg/L	101	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.0011	.45	1.428	mg/L	98	70	130	2	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05431	mg/L	109	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0496		.04809	mg/L	97	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0496	.0003	.0503	mg/L	101	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0496	.0003	.05044	mg/L	101	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05109	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0496		.05013	mg/L	101	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0496	U	.05026	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0496	U	.0505	mg/L	102	70	130	0	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.9572	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.024	0.024			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.001		.9838	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.001	U	.9888	mg/L	99	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.001	U	1	mg/L	100	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.8978	mg/L	95	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.024	0.024			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.0176	0.0176			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.001		.9864	mg/L	99	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.001	.075	1.126	mg/L	105	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.001	.075	1.086	mg/L	101	70	130	4	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		97.28	mg/L	97	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	50.05743		45.33	mg/L	91	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	50.05743	2.1	48.31	mg/L	92	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	50.05743	2.1	48.93	mg/L	94	85	115	1	20	

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		99.24	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	50.05743		47.8	mg/L	95	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	50.05743	37.5	88.76	mg/L	102	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	50.05743	37.5	85.7	mg/L	96	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05122	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0012	0.0012			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.0467	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.0068	.05288	mg/L	92	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.0068	.05329	mg/L	93	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05153	mg/L	103	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0012	0.0012			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00088	0.00088			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05187	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	10.8	10.802	mg/L	4	70	130			M3
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	10.8	10.82	mg/L	40	70	130	0	20	M3

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438721													
WG438721CCV	CCV	12/21/17 11:12	HG171221-4	10		9.3	ng/L	93	76.5	123.4			
WG438721CCB	CCB	12/21/17 11:17				U	ng/L		-0.5	0.5			
WG438721PQV	PQV	12/21/17 11:21	HG171221-6	.5		.45	ng/L	90	70	130			
WG438721LFB	LFB	12/21/17 11:26	HG171221-5	2		2.07	ng/L	104	71	125			
L41683-01MS	MS	12/21/17 11:36	HG171221-5	2	U	2.02	ng/L	101	71	125			
L41683-01MSD	MSD	12/21/17 11:41	HG171221-5	2	U	2.1	ng/L	105	71	125	4	24	
WG438721CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438721CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L41826***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438726													
WG438726CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438726CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			
WG438726PQV	PQV	12/21/17 12:21	HG171221-6	.5		.5	ng/L	100	70	130			
WG438726LFB	LFB	12/21/17 12:26	HG171221-5	2		2.02	ng/L	101	71	125			
WG438726CCV2	CCV	12/21/17 13:14	HG171221-4	10		11.3	ng/L	113	76.5	123.4			
WG438726CCB2	CCB	12/21/17 13:19				U	ng/L		-0.5	0.5			
L41799-01MS	MS	12/21/17 13:48	HG171221-5	2	1.4	3.68	ng/L	114	71	125			
L41799-01MSD	MSD	12/21/17 13:53	HG171221-5	2	1.4	3.69	ng/L	115	71	125	0	24	
WG438726CCV3	CCV	12/21/17 14:12	HG171221-4	10		10.8	ng/L	108	76.5	123.4			
WG438726CCB3	CCB	12/21/17 14:17				U	ng/L		-0.5	0.5			
WG438726CCV4	CCV	12/21/17 14:29	HG171221-4	10		10.9	ng/L	109	76.5	123.4			
WG438726CCB4	CCB	12/21/17 14:34				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02006		.02015	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0015	0.0015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04748	mg/L	95	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0016	.05092	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0016	.05117	mg/L	99	70	130	0	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02006		.01911	mg/L	95	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0015	0.0015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.0011	0.0011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.0486	mg/L	97	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	U	.0498	mg/L	99	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	U	.0494	mg/L	99	70	130	1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05223	mg/L	104	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0018	0.0018			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.0464	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	.0017	.04912	mg/L	95	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	.0017	.04856	mg/L	94	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05196	mg/L	104	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0018	0.0018			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00132	0.00132			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05021	mg/L	100	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.435	.4752	mg/L	80	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.435	.4712	mg/L	72	70	130	1	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438875													
WG438875ICV	ICV	12/22/17 20:58	WI171215-1	2.416		2.297	mg/L	95	90	110			
WG438875ICB	ICB	12/22/17 20:59				U	mg/L		-0.02	0.02			
WG438880													
WG438880LFB1	LFB	12/22/17 23:57	WI170705-5	2		1.939	mg/L	97	90	110			
WG438880LFB2	LFB	12/23/17 0:38	WI170705-5	2		1.894	mg/L	95	90	110			
L41818-12AS	AS	12/23/17 1:05	WI170705-5	6	3.47	9.26	mg/L	97	90	110			
L41819-01DUP	DUP	12/23/17 1:08			30.3	30.28	mg/L				0	20	

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439065													
WG439065ICV	ICV	12/29/17 11:02	WI171221-2	11.988		12.632	mg/L	105	90	110			
WG439065ICB	ICB	12/29/17 11:04				U	mg/L		-0.05	0.05			
WG439065LFB1	LFB	12/29/17 11:05	WI171219-5	10		10.368	mg/L	104	90	110			
L41820-01DUP	DUP	12/29/17 11:08			13	13.033	mg/L				0	20	
L41823-01AS	AS	12/29/17 11:11	WI171219-5	10	U	10.756	mg/L	108	90	110			
WG439065LFB2	LFB	12/29/17 13:40	WI171219-5	10		9.969	mg/L	100	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438847													
WG438847LCSW1	LCSW	12/22/17 15:11	PCN52664	6		6	units	100	5.9	6.1			
L41831-01DUP	DUP	12/22/17 16:39			2.5	2.5	units				0	20	
WG438847LCSW4	LCSW	12/22/17 18:15	PCN52664	6		6	units	100	5.9	6.1			
WG438847LCSW7	LCSW	12/22/17 21:04	PCN52664	6		6.1	units	102	5.9	6.1			
WG438847LCSW10	LCSW	12/22/17 23:30	PCN52664	6		6.1	units	102	5.9	6.1			
WG438847LCSW13	LCSW	12/23/17 0:55	PCN52664	6		6.1	units	102	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L41826***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438795													
WG438795ICV	ICV	12/21/17 18:30	WI171105-7	.65228		.675	mg/L	103	90	110			
WG438795ICB	ICB	12/21/17 18:32				U	mg/L		-0.02	0.02			
WG438804													
WG438659LRB	LRB	12/22/17 0:09				U	mg/L		-0.02	0.02			
WG438659LFB	LFB	12/22/17 0:10	WI171213-4	.5		.5	mg/L	100	90	110			
L41820-01LFM	LFM	12/22/17 0:14	WI171213-4	.5	.04	.544	mg/L	101	90	110			
L41821-01DUP	DUP	12/22/17 0:17			.03	.035	mg/L				15	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	20		19.64	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	100.0094		96.94	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	100.0094	3.3	102.9	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	100.0094	3.3	104.1	mg/L	101	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	20		19.78	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	100.0094		100.4	mg/L	100	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	100.0094	21	127.6	mg/L	107	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	100.0094	21	122.8	mg/L	102	70	130	4	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438427													
WG438427PBW	PBW	12/18/17 13:28				10	mg/L		-20	20			
WG438427LCSW	LCSW	12/18/17 13:29	PCN54730	260		266	mg/L	102	80	120			
L41831-02DUP	DUP	12/18/17 14:52			4370	4340	mg/L				1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438673													
WG438673PBW	PBW	12/20/17 16:00				U	mg/L		-15	15			
WG438673LCSW	LCSW	12/20/17 16:01	PCN54004	160		155	mg/L	97	80	120			
L41862-12DUP	DUP	12/20/17 16:29			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L41826***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.97	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.3	0.3			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.9868		.96	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.9868	U	1	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.9868	U	1.01	mg/L	102	85	115	1	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.94	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.3	0.3			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.22	0.22			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.9868		1.01	mg/L	102	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.9868	U	.8	mg/L	81	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.9868	U	.77	mg/L	78	70	130	4	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.0494	mg/L	99	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04641	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	.0001	.05071	mg/L	101	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	.0001	.05072	mg/L	101	70	130	0	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05067	mg/L	101	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.05236	mg/L	105	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0051	.05904	mg/L	108	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0051	.05872	mg/L	107	70	130	1	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.02004		.020476	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.00015	0.00015			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.01002		.009311	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.01002	U	.008783	mg/L	88	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.01002	U	.008891	mg/L	89	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.02004		.02048	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.00015	0.00015			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00011	0.00011			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.01002		.009788	mg/L	98	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.01002	.0001	.00953	mg/L	94	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.01002	.0001	.00948	mg/L	94	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	100		98.52	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.6	0.6			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	100.0062		97.4	mg/L	97	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	100.0062	U	99.93	mg/L	100	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	100.0062	U	100.9	mg/L	101	85	115	1	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	100		97.22	mg/L	97	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.6	0.6			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.44	0.44			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	100.0062		98.38	mg/L	98	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	100.0062	127	235.3	mg/L	108	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	100.0062	127	227.1	mg/L	100	70	130	4	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.959	mg/L	98	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.015	0.015			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	.5015		.4912	mg/L	98	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	.5015	.052	.5454	mg/L	98	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	.5015	.052	.5487	mg/L	99	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.9292	mg/L	96	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.015	0.015			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.011	0.011			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.5015		.4915	mg/L	98	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.5015	2.1	2.704	mg/L	120	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.5015	2.1	2.623	mg/L	104	70	130	3	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	50		50.2	mg/L	100	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.3	mg/L	98	90	110			
L41826-01DUP	DUP	12/29/17 0:12			86.4	86.6	mg/L				0	20	
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		29.6	mg/L	99	90	110			
L41828-01AS	AS	01/03/18 9:26	WI171110-4	30030	54200	82100	mg/L	93	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05353	mg/L	107	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.0501		.04697	mg/L	94	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.0501	U	.04906	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.0501	U	.04925	mg/L	98	70	130	0	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05241	mg/L	105	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.0501		.05119	mg/L	102	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.0501	.0003	.0497	mg/L	99	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.0501	.0003	.04992	mg/L	99	70	130	0	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.04945		.05051	mg/L	102	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.04945		.04753	mg/L	96	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.04945	U	.04853	mg/L	98	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.04945	U	.04882	mg/L	99	70	130	1	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.04945		.0467	mg/L	94	90	110			
WG439078ICB	ICB	12/29/17 13:39				.00016	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.04945		.04815	mg/L	97	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.04945	U	.04792	mg/L	97	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.04945	U	.04984	mg/L	101	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438777													
WG438777ICV	ICV	12/21/17 17:37	II171220-1	2		1.9775	mg/L	99	95	105			
WG438777ICB	ICB	12/21/17 17:43				U	mg/L		-0.015	0.015			
WG438777LFB	LFB	12/21/17 17:55	II171220-5	1.003		1.011	mg/L	101	85	115			
L37475-30AS	AS	12/21/17 18:56	II171220-5	1.003	.009	1.022	mg/L	101	85	115			
L37475-30ASD	ASD	12/21/17 18:59	II171220-5	1.003	.009	1.032	mg/L	102	85	115	1	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.9712	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.015	0.015			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.011	0.011			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	1.003		1.027	mg/L	102	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	1.003	.015	1.006	mg/L	99	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	1.003	.015	.9988	mg/L	98	70	130	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.05248	mg/L	105	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0003	0.0003			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05		.04759	mg/L	95	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05	U	.05018	mg/L	100	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05	U	.05055	mg/L	101	70	130	1	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.05078	mg/L	102	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0003	0.0003			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00022	0.00022			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05		.05185	mg/L	104	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05	.0545	.10894	mg/L	109	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05	.0545	.10974	mg/L	110	70	130	1	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439036													
WG439036ICV	ICV	12/28/17 19:47	MS171115-2	.05		.04991	mg/L	100	90	110			
WG439036ICB	ICB	12/28/17 19:49				U	mg/L		-0.0006	0.0006			
WG439036LFB	LFB	12/28/17 19:51	MS171129-3	.05005		.04654	mg/L	93	85	115			
L41815-01AS	AS	12/28/17 20:25	MS171129-3	.05005	U	.0496	mg/L	99	70	130			
L41815-01ASD	ASD	12/28/17 20:27	MS171129-3	.05005	U	.04969	mg/L	99	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41826***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439078													
WG439078ICV	ICV	12/29/17 13:36	MS171115-2	.05		.04879	mg/L	98	90	110			
WG439078ICB	ICB	12/29/17 13:39				U	mg/L		-0.0006	0.0006			
WG438911LRB	LRB	12/29/17 13:42				U	mg/L		-0.00044	0.00044			
WG438911LFB	LFB	12/29/17 13:45	MS171129-3	.05005		.04963	mg/L	99	85	115			
L41778-02LFM	LFM	12/29/17 14:39	MS171129-3	.05005	.0006	.05106	mg/L	101	70	130			
L41778-02LFMD	LFMD	12/29/17 14:42	MS171129-3	.05005	.0006	.05032	mg/L	99	70	130	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438843													
WG438843ICV	ICV	12/22/17 19:15	II171220-1	2		1.905	mg/L	95	95	105			
WG438843ICB	ICB	12/22/17 19:20				U	mg/L		-0.03	0.03			
WG438843LFB	LFB	12/22/17 19:33	II171220-5	.4942		.5	mg/L	101	85	115			
L37475-30AS	AS	12/22/17 20:18	II171220-5	.4942	U	.523	mg/L	106	85	115			
L37475-30ASD	ASD	12/22/17 20:21	II171220-5	.4942	U	.509	mg/L	103	85	115	3	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439197													
WG439197ICV	ICV	01/03/18 0:33	II171206-1	2		1.976	mg/L	99	95	105			
WG439197ICB	ICB	01/03/18 0:39				U	mg/L		-0.03	0.03			
WG438891LRB	LRB	01/03/18 0:52				U	mg/L		-0.022	0.022			
WG438891LFB	LFB	01/03/18 0:56	II171220-5	.4942		.525	mg/L	106	85	115			
L41819-02LFM	LFM	01/03/18 1:51	II171220-5	.4942	.08	.621	mg/L	109	70	130			
L41819-02LFMD	LFMD	01/03/18 1:54	II171220-5	.4942	.08	.606	mg/L	106	70	130	2	20	

SPF Water Engineering ACZ Project ID: ***L41826***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L41826-01	WG439078	Copper, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438950	Cyanide, total	M335.4 - Colorimetric w/ distillation	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438951	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG439078	Manganese, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438804	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438673	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438847	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID: L41826
Date Received: 12/16/2017 10:30
Received By:
Date Printed: 12/18/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Report to Name. Copy of Report to Email. Sample ID Line 1. Relinquished By section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
4661	2.5	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID:	L41826
Date Received:	12/16/2017 10:30
Received By:	
Date Printed:	12/18/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L41826

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jase Thompson	Address: 300 E. Mallard Dr. Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@spfwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name: Kurt Newbry	E-mail: knewbry@spfwater.com
Company: SPF Water Engineering	Telephone: (208) 520-9173

Invoice to:

Name: Same	Address: same
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** State ID Zip code 83706 Time Zone MTN

***Sampler's Signature:** _____

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF-2017-GW

PO#: Calico Monitoring Well Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	*SPF-2017-GW							
GMW17-33	12/14/17 16:00	GW	9	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

*See attached for Parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kurt Newbry	12/15/17 13:30	BCE	12/16/17 1030

L41826 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

REPAD.09.06.05.01 S/ mj D/ ## P/

,

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

Grassy Mountain Ground Water Monitoring Sampling Form

Well No.: GMW17-33 Page No.: 1 of 1

Personnel: Kurt Newbry

Date: 12/14/2017 Photos (#,Name): _____

SPF Sounder #: Driller's Non-stretch sounder **GPS Coord. (UTM 11N, NAD83)**

Sounder Correction: calibration checked w/ SPF 800' non-stretch Northing: _____

Weather: overcast/cold Easting: _____

Wat Lev Transducer Download? Y _____ N /

Well Description

Surface Casing Diam (in): 12

Well Casing Diam (in): 5 PVC

Surface Casing Height AGL (ft): ~3

WL Meas Point Desc: top of 1¼" pvc monitoring tube

Const Depth [ft, BMP]: ~340

Locked? Y _____ N /

Well Condition: _____

Casing Purge

3x Casing Volume (gal): 260

Flow Rate (gpm): 30

Required Purge Time (min): ~9

Pump Description

Permanent: _____ Temporary: ✓

Type: A.Y. McDonald Mfg. Co. HP: 5

Setting Depth (ft): 340'

Drop Pipe Diam (in): 2 PVC

Notes: _____

Water Quality

Sample Time: 18:00

Field Filtered? Y ✓ N _____

Samples Filtered: 3

Equip Blank Collected? Y _____ N _____

Transfer Blank Collected? Y ✓ N _____

Duplicate Set Collected? Y _____ N ✓

Sampler Signature: _____

Time	DTW [ft]	Flow Rate [gpm]	pH [S.U.]	EC [µS/cm]	SC [µS/cm @ 25°C]	Temp [°C]	DO [mg/L] / [% Sat]	Notes (Visual Appearance)
14:00	244.13	0	-	-	-	-	-	Pump On
14:03	248.90	30						
14:27	255.30	30	6.46	319	388	15.7	2.75	crystal clear, medium degassing, no odor, no sand
14:45	258.00	30	6.78	315	383	15.7	2.35	
15:08	259.34	30	6.88	312	379	15.7	2.17	
17:04	~266	30	6.95	278	338	15.7	1.66	
17:42	267.16	30	6.95	274	333	15.6	1.7	
18:20	267.60	30	6.95	268	327	15.7	1.68	clear, no sand, medium degassing, no odor

Field Equipment Calibration Record

Instrument: pH Meter
Manufacturer / Model: ~~YSI Ecosense pH100~~ Hanna HI 98131
Date / Time of Calibration: 12/13/2017 21:00
Calibration Method: ~~2-point~~ Single Point 6.88
Buffers Used: checked calibration with 4 and 7 buffers on 12/14/17
Slope Deviation:
Electrode Efficiency:
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

Instrument: Conductivity Meter
Manufacturer / Model: ~~YSI Ecosense EC300~~ YSI Pro-Plus
Date / Time of Calibration: 12/13/2017 21:00
Calibration Method: 1413µs/cm standard
Cell Constant: ✓ Default? ____ Yes ____ No
Temperature Coefficient: ✓ Default? ____ Yes ____ No
Temperature Reference: ✓ Default? ____ Yes ____ No
Conductivity Standard: 1413µs/cm
Conductivity Standard @ 25C: 1413µs/cm
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

Instrument: Dissolved Oxygen Meter
Manufacturer / Model: ~~OxyGuard Handy Polaris 2~~ YSI Pro-Plus
Date / Time of Calibration: 12/14/17 13:30
Calibration Method: % DO
Initial DO Saturation Reading: 86.7% (Should read 100.5%)
Calibration Needed? ✓ Yes ____ No
Calibration Precision: ✓ Field ____ Normal ____ High
Successful Calibration? ✓ Yes ____ No
If No, List Corrective Action:
Signature: Kat Newly

MONITORING WELL GMW17-32 COMPLETION REPORT

CALICO RESOURCES USA CORP.

GRASSY MOUNTAIN PROJECT

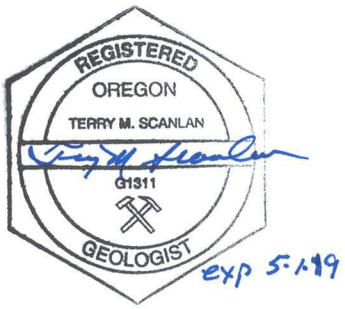
Prepared for

Calico Resources USA Corp.
665 Anderson Street
Winnemucca, Nevada 89445

Prepared by

SPF Water Engineering, LLC
300 E. Mallard Drive, Suite 350
Boise, ID 83706

August 20, 2018



SPF WATER ENGINEERING

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Attachments

Attachment A: State of Oregon Monitoring Well Report
Attachment B: Lithologic Log
Attachment C: Photographs
Attachment D: As-Built Well Drawing
Attachment E: Test Pumping Data
Attachment F: Water Level Graphs from Nearby Wells
Attachment G: Water Quality Results
Attachment H: Water Quality Re-Sampling Results

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1. INTRODUCTION

1.1. Background

A *Final Work Plan* (Plan) *for Grassy Mountain Monitoring Wells* prepared by SPF Water Engineering (SPF) dated November 28, 2016, was approved by the State of Oregon Technical Review Team (TRT) by letter dated January 6, 2017. The Plan described the location, construction, testing, and sampling of five proposed monitoring wells for Calico Resources USA Corp (Calico). These monitoring wells were proposed in the vicinity of the deposit for the purpose of aquifer characterization and to better understand the potential impacts of groundwater on mining operations, including potential dewatering requirements.

This well completion report describes the drilling, construction, testing, and water quality sampling from the deep downgradient well, referred to as GMW17-32. This report is intended to notify the TRT of initial testing and water quality results and re-development efforts.

1.2. Site Location

GMW17-32 is located in the SE ¼ of the NW ¼ of Section 8, Township 22 South, Range 44 East in Malheur County, Oregon. The well coordinates are 43.6724 decimal degrees latitude and -117.36157 decimal degrees longitude. The well is approximately 600 feet northwest of the deposit (Figure 1).

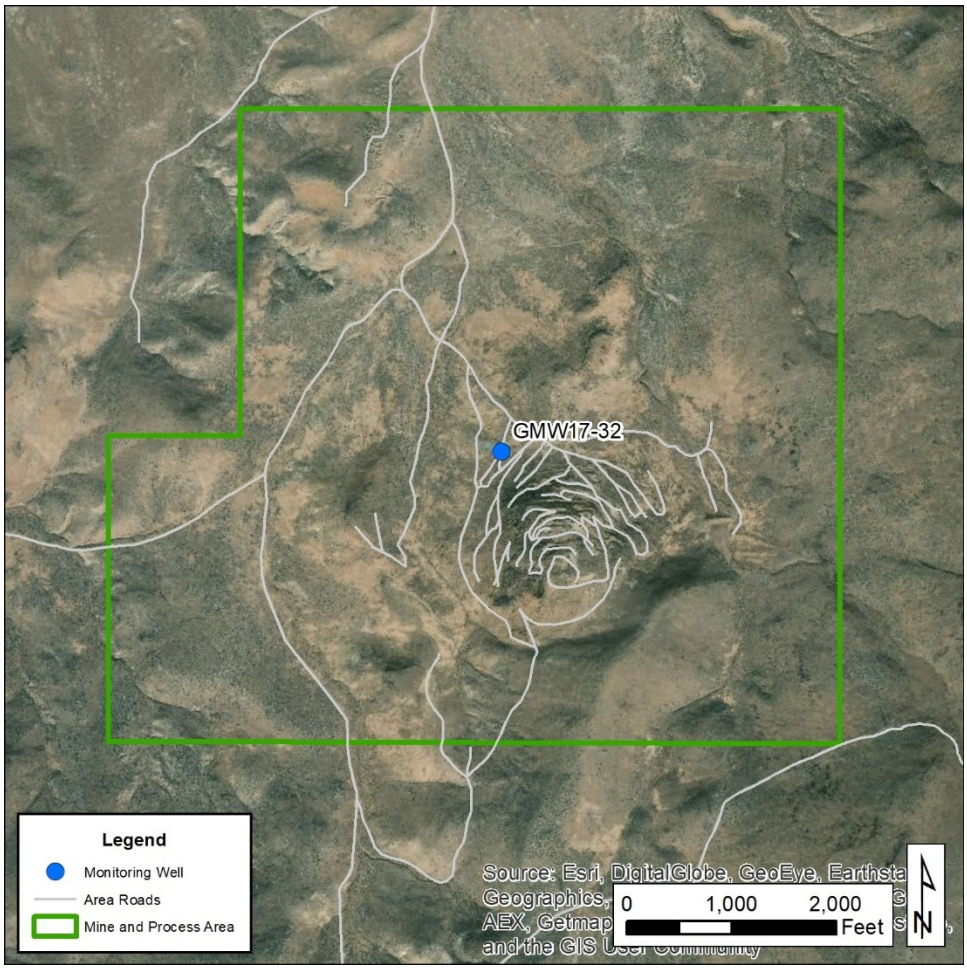


Figure 1. Vicinity map of well locations

2. DRILLING, CONSTRUCTION, AND DEVELOPMENT

2.1. Introduction

Well construction began on August 29, 2017 and was completed on November 30, 2017. The well was constructed using the air-rotary method of drilling by Down Right Drilling & Pump Inc. (Down Right), Oregon well driller's license number 1896. The well was constructed under start card number 1036039. The State of Oregon Monitoring Well Report is included in Attachment A.

2.2. Surface Casing Installation

As the first step in the well construction process, a nominal 10-inch borehole was drilled to 120 feet through the overburden (0 to 5 feet), siltstone/claystone and clay (5 to 20 feet), interbedded sandstone, siltstone, claystone, clay, and tuff (20 to 100 feet), and arkose/tuff (100 to 120 feet). The lithologic log is included in Attachment B. The 10-inch bore was

then reamed to a 16-inch bore from the surface to a depth of 118 feet for installation of a 12-inch surface casing.

A nominal 12-inch diameter mild steel casing with 0.250-inch wall thickness was installed from approximately 34 inches above ground surface to a depth of 118 feet. The annulus between the 12-inch casing and the 16-inch bore was sealed from 118 feet to ground surface with 79.2 ft^3 of Portland Type I/II neat cement grout pumped through a tremie pipe from the bottom up. This volume of cement is approximately 123% of the calculated volume needed for a 118-foot-long, 12.5-inch to 16-inch annulus.

2.3. Borehole Drilling

Following installation and sealing of the surface casing, a nominal 12-inch diameter bore was advanced from 118 to 1,004 feet by air-rotary drilling. Drilling encountered the following lithology as described on the lithologic log in Attachment B:

- arkose, tuff, and sinter to a depth of 175 feet
- clay to 195 feet
- siltstone, tuff, and minor sinter to 275 feet
- siltstone and mudstone to 325 feet
- siltstone and sinter to 375 feet
- siltstone and tuff to 410 feet
- arkose to 470 feet
- siltstone, mudstone, and clay to 515 feet
- arkose to 545 feet
- tuff, arkose, siltstone, and clay to 835 feet
- arkose with minor tuff and siltstone to 1,004 feet

The lithology is moderately to highly silicified from a depth of 150 feet to 550 feet with trace or weak silicification above and below this zone. The drilling was typically difficult, with layers of swelling clay, hard rock, and fractured pockets where circulation was lost.

Water was encountered at a depth of 235 feet, estimated to be approximately 25 gpm by air-lifting. The hole was drilled to the total depth of 1,004 feet by September 1, 2017. During drilling and associated air-lifting, there was no evidence of additional water below a depth of 235 feet. By September 5, the bore had caved back to 230 feet. Due to issues with hole instability, the driller, in consultation with SPF and Calico, determined that the best course of action was to install and seal 8-inch casing through the unstable borehole.

2.4. Installation of and Drilling Below 8-inch Casing

A nominal 8-inch diameter mild steel casing with 0.250-inch wall thickness was ultimately installed to a depth of 655 feet, with down-hole conditions preventing a deeper installation. Once the casing was installed, a nominal 8-inch diameter bore was drilled below the casing to a depth of 900 feet in an attempt to open the bore. No water was observed at the surface while drilling to 900 feet. At that depth unstable hole conditions required the drill pipe to be removed.

Once the drill pipe was removed, a camera was lowered down the well to assess bore conditions. The camera revealed that the hole had caved back to a depth of 681 feet. A large void was observed at that depth. In order to advance the bore and complete the well, it was decided that the void should be filled with cement to maintain circulation during drilling. A total of 243 ft^3 of Portland type I/II neat cement grout were pumped by tremie pipe into the bottom of the bore, where the top of the cement was tagged inside the 8-inch casing at a depth of 367 feet. Down Right then used a "dart" to push the cement down the 8-inch casing to a depth of 460 feet, with the intent of sealing the void and pushing cement upward into the annulus outside the 8-inch casing. This volume of cement is approximately 139% the calculated volume of the open bore/casing, annulus size, and annulus length mentioned above.

The annulus outside of the 8-inch casing was then sealed from a depth of 460 feet to ground surface with neat cement by pumping through a tremie pipe. A total of 451 ft^3 of Portland type I/II neat cement grout was pressure-grouted between the 12-inch annulus and 8-inch casing. The volume of grout pumped into the annulus during this process was 251% the calculated volume, indicating voiding and/or large amounts of cement loss to fractures.

After the seal was allowed to set up, drilling of a nominal 8-inch diameter bore was resumed to a depth of 900 feet. However, the hole ultimately caved back to a depth of 720 feet.

2.5. Casing and Screen Placement

The well was completed with a single string of nominal 5-inch diameter flush-joint schedule 80 PVC casing and screen. The casing was set from approximately 18 inches above ground surface to a depth of 678 feet, with screen (slot size 0.020-inch) set from a depth of 678 to 718 feet. The 5-inch casing was fitted with centralizers every 60 feet to maintain a consistent annular space inside the 8-inch casing.

2.6. Filter Pack

Filter pack (No. 10-20 Colorado Silica Sand) was placed in the annular space outside the 5-inch screen and casing from a depth of 670 to 719 feet. A filter pack seal consisting of No. 20-40 Colorado Silica Sand filter pack was placed from 668 to 670 feet to prevent cement intrusion into the underlying filter pack during seal placement. All filter pack was washed into place through flush-joint PVC tremie pipe.

2.7. Seal Placement

Following installation of the 5-inch PVC casing and screen and filter pack, tremie pipe was set to 668 feet (top of the filter pack seal) and 78 ft^3 of a bentonite-cement grout was pressure-grouted into the annulus between the 5-inch PVC casing, 8-inch steel casing, and 8-inch drilled cement plug in the 12-inch bore. The seal was placed from a depth of 287 feet to 668 feet. The grout volume required was approximately 114% of the calculated volume based on the annulus dimensions mentioned above. The bentonite-cement grout consisted of 3.75 pounds of bentonite (Wyo-Ben Groutwell DF) per 94-lb sack of Portland

type I/II neat cement with 7.8 gallons of water. The water and bentonite were mixed first, then the cement added to the slurry.

Sealing the 5-inch casing was performed in accordance with a Special Standards Request Form approved by the Oregon Water Resources Department (OWRD) by letter dated November 2, 2017. A copy of the letter is included with the Monitoring Well Report in Attachment A.

2.8. Well Head Assembly

The 12-inch surface casing extends approximately 34 inches above ground level. The surface casing serves as a protective well shelter for the PVC well casing. The surface casing is fitted with a locking cap to secure the well head. The 8-inch casing extends 1 foot above ground surface with visible cement in the annulus between the 8-inch and 12-inch casings. The top of the 5-inch PVC casing is approximately 18 inches above ground level and is fitted with a vented, removable sanitary well cap.

The OWRD well tag is permanently affixed to the 12-inch surface casing by means of a stainless steel band. A concrete pad (3 feet square) was poured around the well head shelter. Three protective bollards were placed around the well shelter.

Photographs of the well head assembly are provided in Attachment C.

2.9. As-Built Schematic

The as-built well construction schematic for the well is provided as Attachment D.

2.10. Well Development

After completion, GMW17-32 was bailed for 11 hours with a 3-inch bailer then development pumped at 0.5 gpm for 3.5 hours. The well produced some fine sand and silts during development. At the end of the development, the well was not producing sediment and the water only had a slight color.

3. TEST PUMPING AND WATER QUALITY

3.1. Well Testing

Well GMW17-32 was tested on December 11, 2017 using a 5-hp Grundfos S15-31 submersible pump. The pump was supplied by Down Right and set on 1-inch drop pipe at a depth of approximately 717 feet, 1 foot from the bottom of the well and 39 feet below the top of the screen interval. A 1.25-inch PVC sounding tube was installed to the top of the pump. After installation the pump was operated for a brief period of time to assess operation.

Prior to testing a water level pressure transducer was installed in the well to automatically record water levels at one-minute intervals. The pressure data was corrected for barometric pressure. The test pumping was supervised by Kurt Newbry, P.G. from SPF. Manual water level measurements were made by Kurt Newbry using a non-stretch well sounder. Due to low pumping rates, flow was measured with a 5-gallon bucket and stopwatch.

The static water level measured right before the start of test pumping was 648.33 feet below the measurement point (bmp). The measurement point was the top of the 1.25-inch sounding tube, 22.5 inches above the top of the 5-inch PVC casing, approximately 40 inches above ground surface. The well was finished being developed by pumping on December 8, 2017, at 19:00, allowing approximately 2.5 days of recovery prior to starting the test pumping. Given the slow recovery exhibited by this well, the well may still have been recovering from development when the test pumping began.

Well testing began at a pumping rate of 2.5 gpm, but after 17 minutes the water level was measured at 676.65 feet bmp (drawdown of 28.32 feet). In an attempt to prolong the test, the flow was reduced to 2 gpm. After pumping at 2 gpm for 67 minutes (84 minutes since test began), the water level was measured at 716.32 feet bmp (drawdown of 67.99 feet). The flow was reduced again to approximately 0.8 gpm. After 21 minutes of pumping at 0.8 gpm (105 minutes since test began), the water level reached the pump intake at a depth of 717.70 feet bmp and the pump was shut off to allow for recovery.

After 187 minutes of recovery, the water level was measured at 708.45 feet bmp. The pump was turned back on at 2 gpm and ran for 23 minutes to allow for water quality sampling.

An arithmetic time series plot showing well development, brief operation to test pump after installation, development pumping, test pumping, and recovery until December 28, 2017, is presented as Figure 2. Test pumping data are provided as Attachment E.

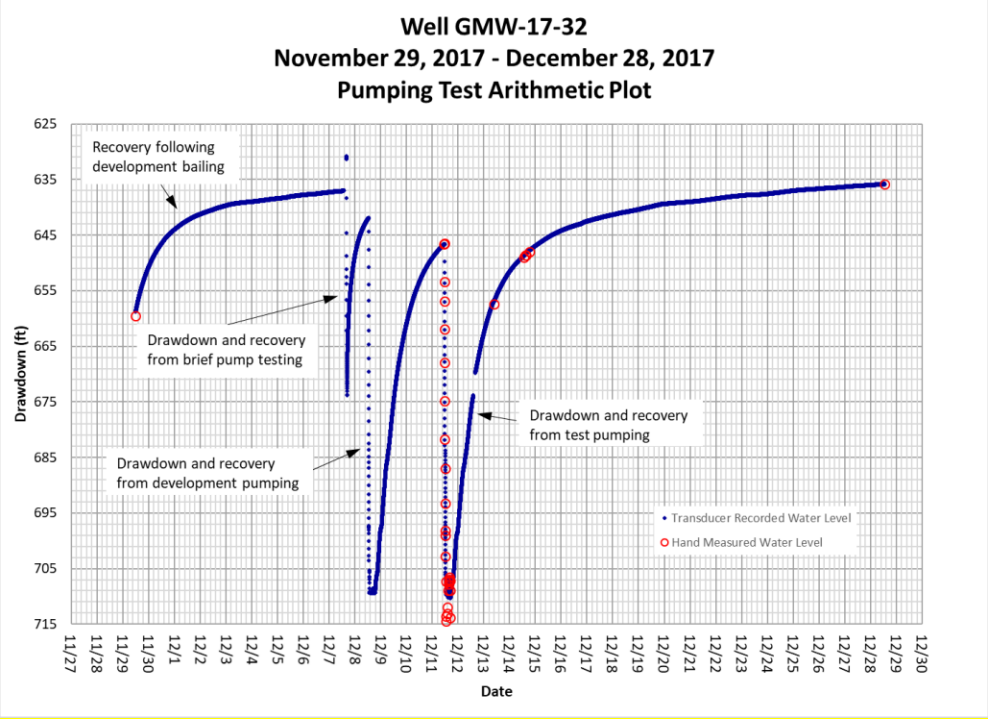


Figure 2. Pumping test arithmetic plot

3.2. Aquifer Characteristics

3.2.1. Casing Storage

The test pumping data was used to evaluate aquifer characteristics. In order to assess these characteristics, the volume of water actually pumped from the aquifer versus the water pumped from the casing (casing storage) needs to be determined. A total of 182 gallons were pumped from the well during the first part of the test before the water level reached the pump suction. The casing held approximately 66 gallons of water and the filter pack held an additional approximate 19 gallons of water, for a total casing storage estimate of 85 gallons. Therefore approximately 97 gallons of water were pumped from the formation. If this volume is divided by the initial test duration of 105 minutes, a pumping rate of 0.9 gpm is calculated.

3.2.2. Aquifer Transmissivity

A semi-log plot of the drawdown data is presented below as Figure 3. An aquifer transmissivity of approximately 5 gpd/ft (0.6 ft^2/d) is estimated using the drawdown data and a pumping rate of 0.9 gpm (water pumped from formation). Assuming a saturated aquifer thickness of 200 feet would result in an estimated hydraulic conductivity of 0.003 ft/d. If only the screened interval contributed flow to the well with a saturated thickness of 40 feet, the assumed hydraulic conductivity would be 0.015 ft/d.

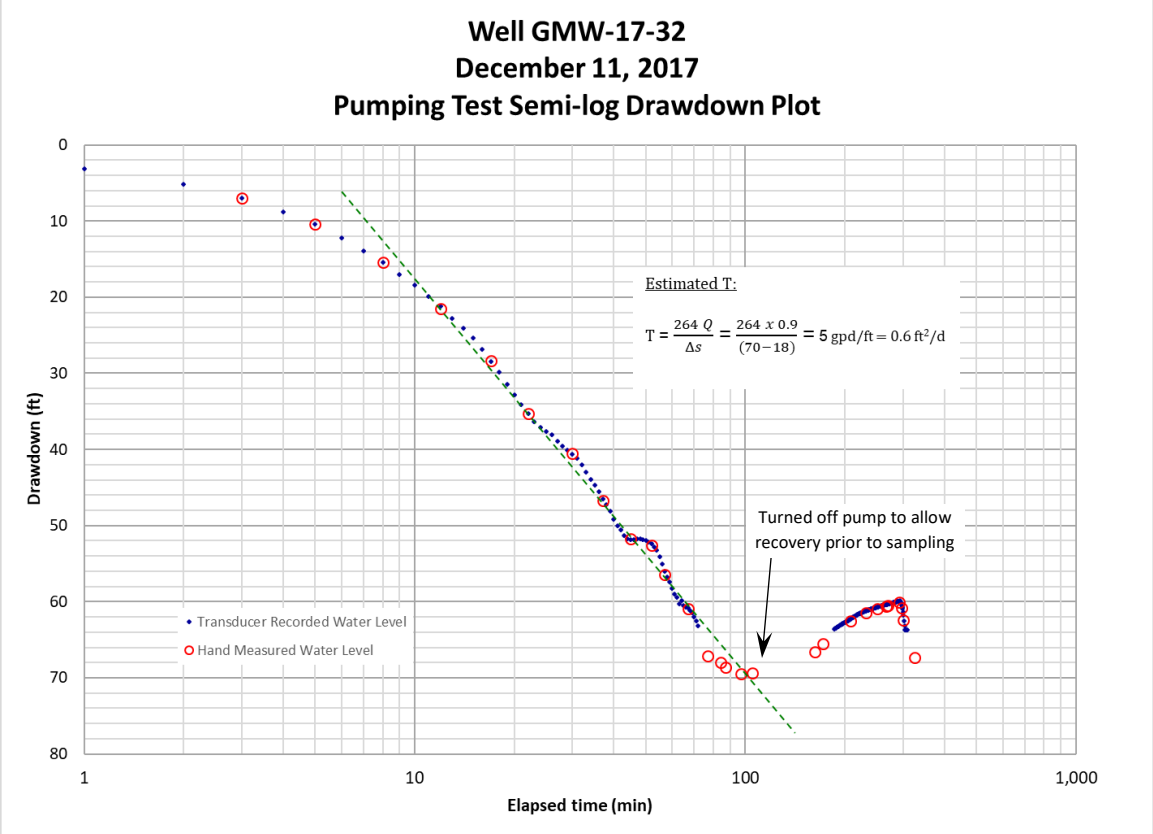


Figure 3. Pumping test semi-log drawdown plot

A semi-log plot of the recovery data collected following the test pumping until June 26, 2018, is presented below as Figure 4. An aquifer transmissivity of approximately 0.6 gpd/ft (0.08 ft^2/d) is estimated using the recovery data and an average pumping rate of 0.9 gpm. Assuming a saturated aquifer thickness of 200 feet would result in an estimated hydraulic conductivity of 0.0004 ft/d. If only the screened interval contributed flow to the well with a saturated thickness of 40 feet, the assumed hydraulic conductivity would be 0.002 ft/d.

The estimated aquifer transmissivity ranges from 0.6 to 5 gpd/ft, while the hydraulic conductivity is estimated to range from 0.002 to 0.015 ft/d assuming only the screened interval is contributing flow to the well. The transmissivity and conductivity values are considered to be very low.

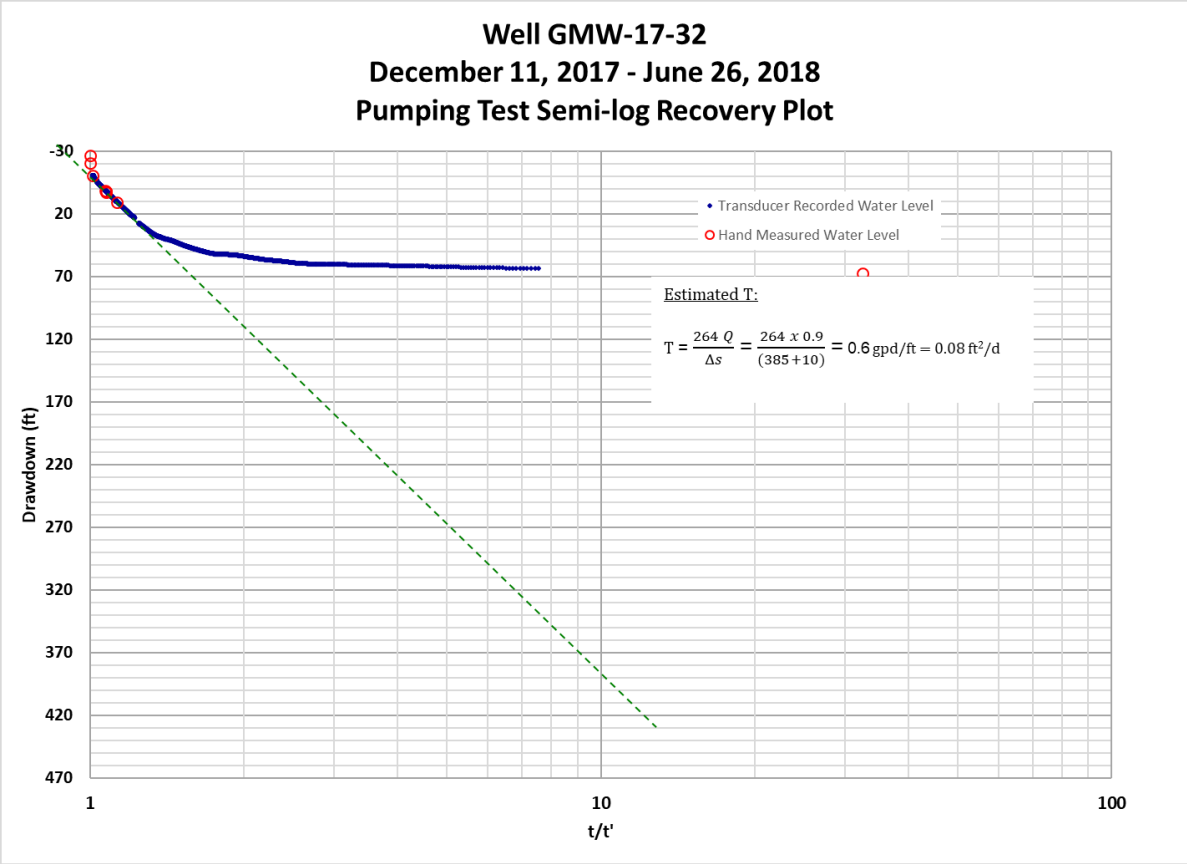


Figure 4. Pumping test semi-log drawdown plot

3.3. Response in Nearby Wells

During the testing of GMW17-32, water levels were measured in nearby wells using water level transducers and manual measurements with a non-stretch well sounder. Pressure transducers were installed in wells 59762, GMW17-33 (shallow pair to GMW17-32), GW-3, 26-92-915, BLM, PW-1, GW-1, 57-10, 59761, 59772, GW-2, and GW-4. A map showing

these wells in proximity to GMW17-32 is included as Figure 5. Plots showing water levels in each of these wells are provided in Attachment F.

The water level plots show that there was no measurable response observed in any of the wells as a result of testing GMW17-32.

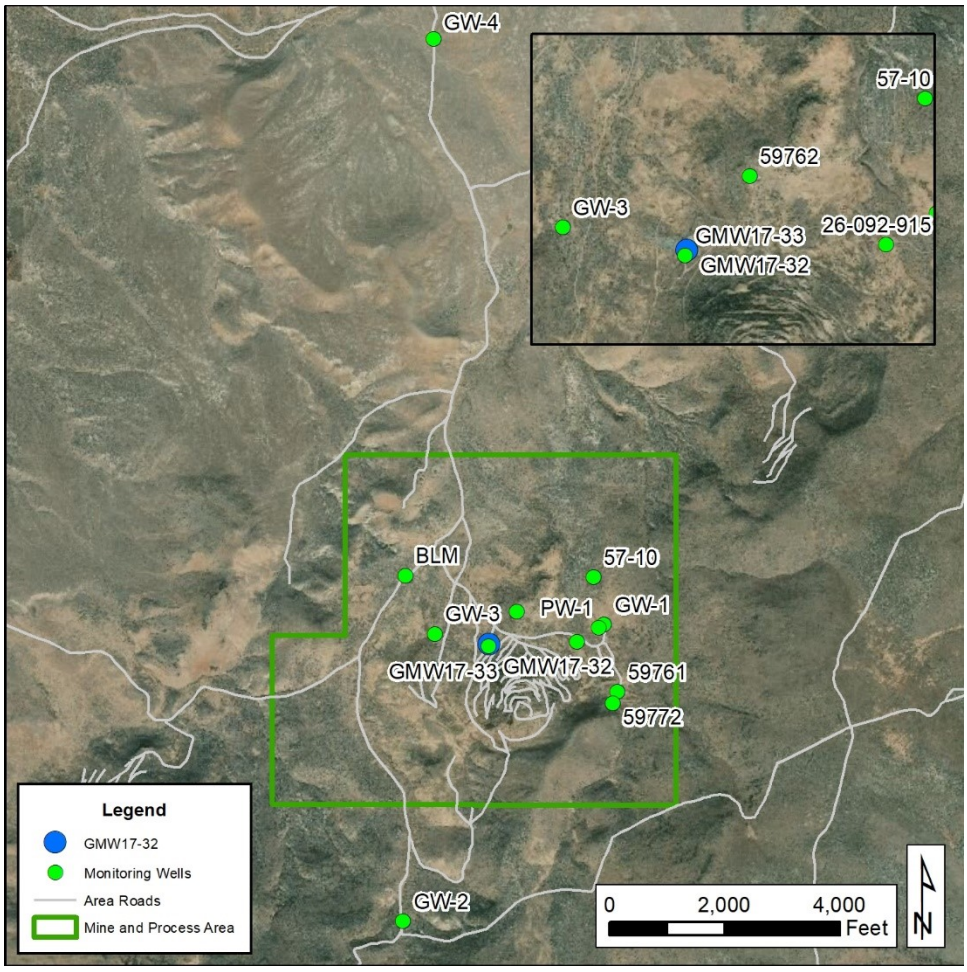


Figure 5. Monitoring well map

3.4. Water Level Recovery

The static water level was measured at a depth of 635.82 feet below the top of the 5-inch casing (btoc) on December 28, 2017, 17 days after the end of the test pumping. The static water level was measured 10 feet higher at a depth of 625.82 feet btoc on March 7, 2018, 86 days after the end of test pumping. The static water level was measured nearly 6 feet higher at a depth of 619.84 feet btoc on June 26, 2018, 197 days after the end of test pumping. A plot of the water level recovery data is presented below as Figure 6.

These measurements indicate that the water level in the well is still recovering and has not reached steady-state conditions. The true piezometric surface is not known at this time. The very slow recovery observed in this well provides more evidence of an extremely low hydraulic conductivity.

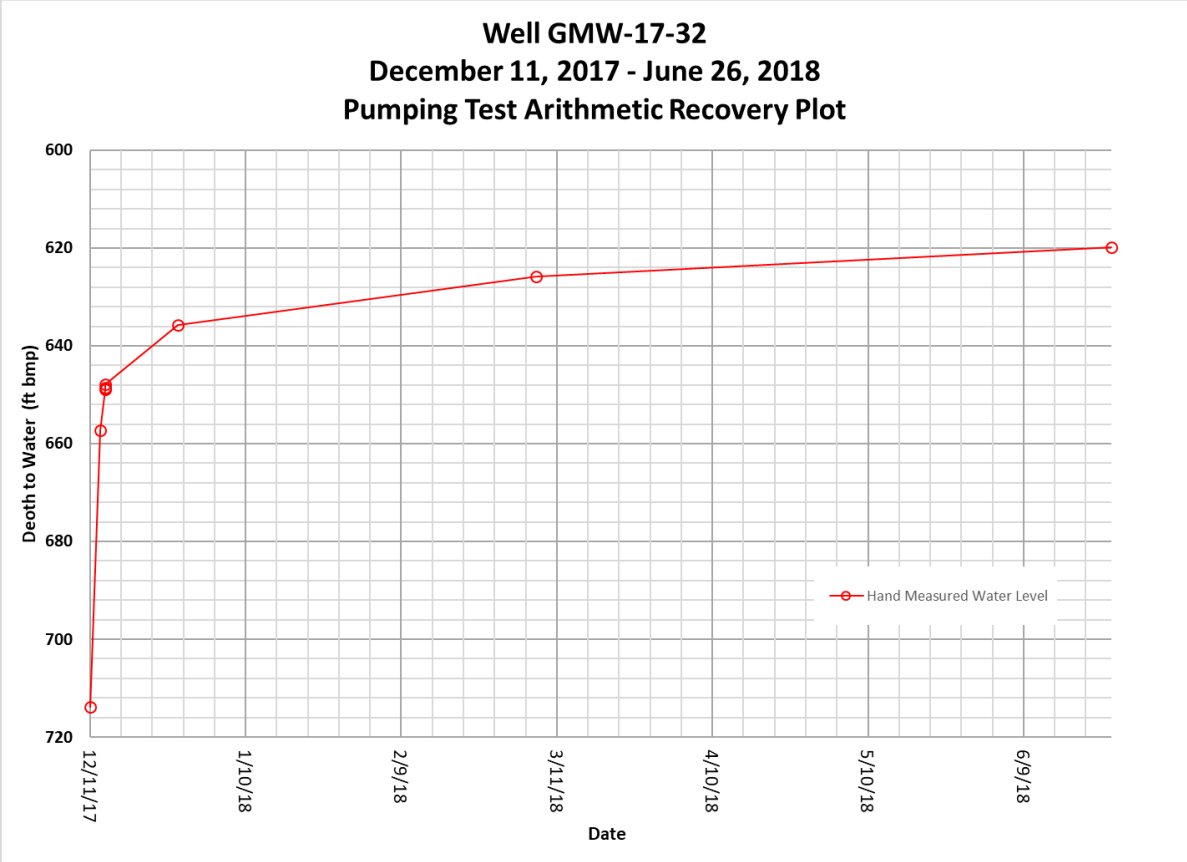


Figure 6. Pumping test arithmetic recovery plot

3.5. Initial Water Quality

3.5.1. Field Water Quality

Field water quality were collected throughout the test pumping. Results are summarized in Table 1 below. The pH measured throughout the test pumping is unusually high, with a value of 11.97 measured right before sample collection. The laboratory reported a pH of 11.3, slightly lower than the pH measured in the field. A pH of around 8 is expected based on the nearby deep well 59762. The conductivity values are also higher than expected when compared to well 59762. The high pH and conductivity values are attributed to inadequate development, with these water quality parameters likely affected by drill cuttings or cement.

Table 1. Field water quality data

Time	pH (S.U.)	EC (µS/cm)	SC (µS/cm @ 25°C)	Temp. (°C)	DO (mg/L)	Notes
11:42	11.93	1745	1930	19.1	1.69	water cloudy
11:52	11.98	1819	1952	21.4	1.05	
12:07	12	1882	1990	22.1	1.65	
12:37	12.03	2048	2149	22.5	0.96	
12:54	11.96	1858	1950	22	0.68	water very cloudy, yellowish brown
12:57	11.98	1889	1995	21.7	0.69	
16:31	11.95	1880	1990	20	0.65	water clearing up, slightly cloudy
16:32	11.97	1887	2095	22	0.69	water slightly cloudy

3.5.2. Laboratory Water Quality

Water quality samples were collected by Kurt Newbry of SPF near the end of the test pumping on December 11, 2017 at 16:32. Samples were taken from a sample tap in the discharge piping while pumping at approximately 2 gpm. The water had a minor amount of color prior to sampling. Water quality sampling procedures and quality assurance/quality control were conducted per the Environmental Baseline Study Work Plans (Work Plans) for the Grassy Mountain Project dated May 17, 2017.

A total of 200 gallons was pumped from the well prior to sampling, equal to three casing volumes of water. This volume removed only accounts for water removed during testing, and does not include water removed from well during bailing and development pumping. Samples were collected for the water quality analytes listed in Table 15 of Section 3.4.4.2.11 of the Work Plans, as amended to include uranium, replace nitrate and nitrite sampling with combined nitrate+nitrite, and remove inorganic arsenic. The samples were shipped to ACZ Laboratories (ACZ) in Steamboat Springs, Colorado on December 12, 2017. The samples were received by ACZ at a temperature of 3.9°C, below the upper limit of 6°C. The field form and laboratory report are provided in Attachment G.

3.5.3. Water Quality Comparison to Drinking Water Standards

Water quality analytical results were compared to Environmental Protection Agency (EPA) primary and secondary drinking water standards. Primary drinking water standards are legally enforceable standards meant to protect public health. The enforceable standards are referred to as maximum contaminant levels (MCLs). Secondary drinking water standards are non-enforceable water quality standards meant to address aesthetic concerns with drinking water, including taste, color, and odor. Secondary standards do not present a public health risk.

The water quality parameters from GMW17-32 exceeding primary or secondary drinking water standards are summarized in Table 2. A total of four analytes exceed their respective MCL; both the total and dissolved concentrations of antimony and arsenic exceeded the MCL.

Nitrate+nitrite was used as a substitute for nitrate and nitrite in this study, which does not have an MCL. However, the water did not have a nitrate+nitrite level exceeding the MCL for nitrite (1 mg/L). Nitrate has a higher MCL of 10 mg/L.

Table 2. Water Quality Results Exceeding Drinking Water Standards

Parameter	MCL (mg/L)	12-11-17 Sample Result (mg/L)[1]
Aluminum, dissolved	0.05	0.25
Aluminum, total	0.05	4.78
Antimony, dissolved	0.006	0.115
Antimony, total	0.006	0.0666
Arsenic, dissolved	0.01	0.0588
Arsenic, total	0.01	0.116
Chromium, total	0.1	0.3
Iron, total	0.3	35.5
Lead, total	0.015	0.0204
Manganese, total	0.05	0.206
Residue, Filterable (TDS) @180C	500	920
Sulfate	250	381

1- values in red are analytes that exceeded primary drinking water standards

3.5.4. Major Ion Geochemistry

Geochemical characteristics of the groundwater from GMW17-32 were evaluated using Piper diagrams (also known as Trilinear diagrams) and Stiff diagrams, with major ions expressed as meq/L. These diagrams are useful for evaluating the geochemical signature of the water, to illustrate general differences in water chemistry using major ions, and to group waters with similar chemical signature into identifiable groups.

The Stiff diagram for GMW17-32 is presented as Figure 7. The Stiff diagram identifies the groundwater as having a sodium-potassium sulfate (Na/K-SO4) water quality signature. For comparison, the nearby deep well 59762 has the same signature.

The Piper diagram for the groundwater quality data from GMW17-32 and the 3rd Quarter 2014 data from all other wells is presented as Figure 8. The Piper diagram also shows a sodium-potassium sulfate (Na/K-SO4) water quality signature for GMW17-32. Well 59762 shows a similar signature.

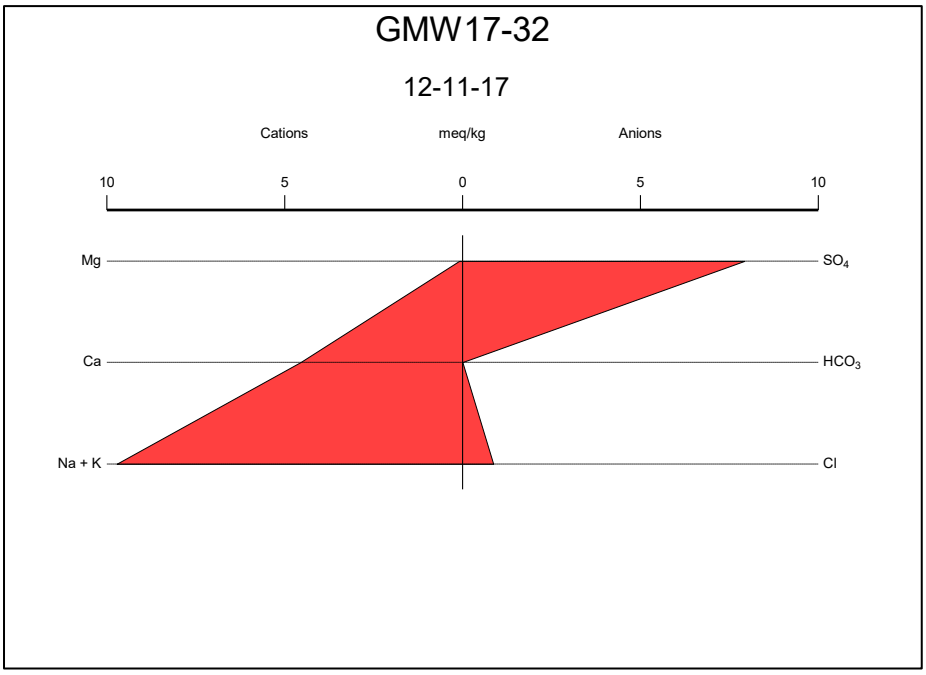


Figure 7. Stiff diagram for GMW17-32

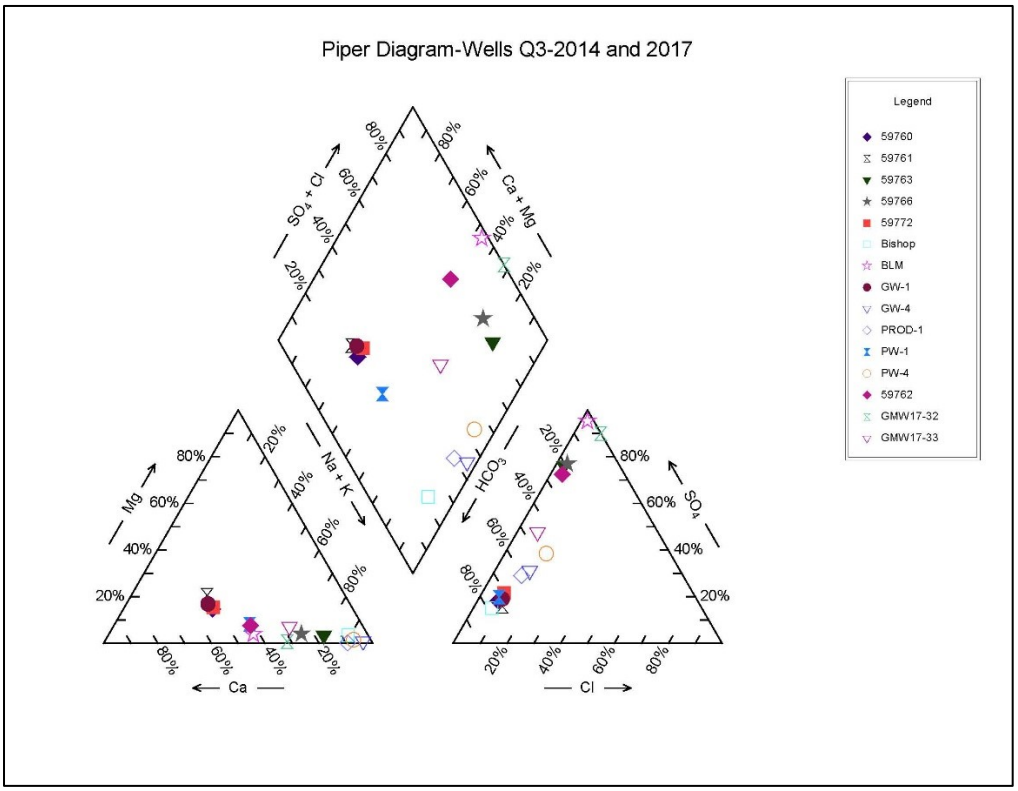


Figure 8. Piper Diagram

3.6. Well Re-development and Sampling

3.6.1. Re-development

The high pH and conductivity, along with minor turbidity observed during the initial sample collection from GMW17-32 suggests inadequate development of the well. Therefore, the well was re-developed by re-installing the test pump and pumping on the well until the water reached the pump suction. This effort occurred on six different occasions between July 18 and July 25, 2018. A total of approximately six casing volumes (approximately 400 gallons) were removed from the well.

3.6.2. Field Water Quality

Field water quality were collected following well re-development pumping on July 25, 2018. Results are summarized in Table 3 below. The pH measured in the field prior to sampling was 10.74, lower than the 11.97 measured prior to the first sample collection. The laboratory reported a pH of 10.3, slightly lower than the pH measured in the field.

The specific conductance was also considerably lower, 1209 µS/cm at 25°C versus 2095 µS/cm at 25°C. During sampling the water was clear, but had a cloudy red appearance prior to and after sampling. The lower pH and conductivity values, along with the water clarity, suggests that the re-development has had a positive effect on water quality.

Table 3. Field water quality data during re-development

Time	pH (S.U.)	EC (µS/cm)	SC (µS/cm @ 25°C)	Temp. (°C)	DO (mg/L)	Notes
11:18	11.44	1134	1390	15.3	1.45	water cloudy red
11:27	11.22	1126	1270	18.9	0.51	water cloudy red
11:36	10.74	1047	1118	21.7	2.76	water clear
11:57	10.78	1126	1192	22.2	3.34	water slightly cloudy
12:00	11.12	1192	1258	22.2	3.60	water cloudy red
12:04	11.06	1145	1209	22.3	2.62	water cloudy red

1.1.1. Laboratory Water Quality

Water quality samples were collected by Kurt Newbry of SPF following well re-development on July 25, 2018 at 11:36. Samples were taken from a sample tap in the discharge piping while pumping at approximately 2.6 gpm. Samples were collected for the same parameters as the initial sampling. The sample were shipped to ACZ Laboratories (ACZ) in Steamboat Springs, Colorado on July 25, 2018. The samples were received by ACZ at a temperature of 5.7°C, below the upper limit of 6°C. The field form and laboratory report are provided in Attachment H.

3.6.3. Water Quality Comparison to Drinking Water Standards

Water quality analytical results from the re-sampling were compared to primary and secondary drinking water standards. The water quality parameters from re-sampling GMW17-32 that exceeded primary or secondary drinking water standards are summarized in Table 4. A total of two analytes exceed their respective MCL, antimony and arsenic. Both the total and dissolved concentrations of antimony and arsenic exceeded the MCL.

Table 4. Water Quality Re-Sampling Results Exceeding Drinking Water Standards

Parameter	MCL (mg/L)	7-25-18 Sample Result (mg/L)[1]
Aluminum, total	0.05	0.09
Antimony, dissolved	0.006	0.0939
Antimony, total	0.006	0.0876
Arsenic, dissolved	0.01	0.0871
Arsenic, total	0.01	0.0881
Iron, total	0.3	0.34
Residue, Filterable (TDS) @180C	500	768
Sulfate	250	417

1- values in red are analytes that exceeded primary drinking water standards

3.6.4. Major Ion Geochemistry

Geochemical characteristics of the re-sampled groundwater from GMW17-32 were evaluated using Piper diagrams and Stiff diagrams. The Stiff diagram for the re-sampled GMW17-32 is presented as Figure 9.

The Stiff diagram identifies the groundwater as having a sodium-potassium sulfate (Na/K-SO4) water quality signature, the same as the original samples.

The Piper diagram for the original and re-sampled groundwater quality data from GMW17-32 and the 3rd Quarter 2014 data from all other wells is presented as Figure 10. The Piper diagram also shows a sodium-potassium sulfate (Na/K-SO4) water quality signature for the original sample and re-sample from GMW17-32.

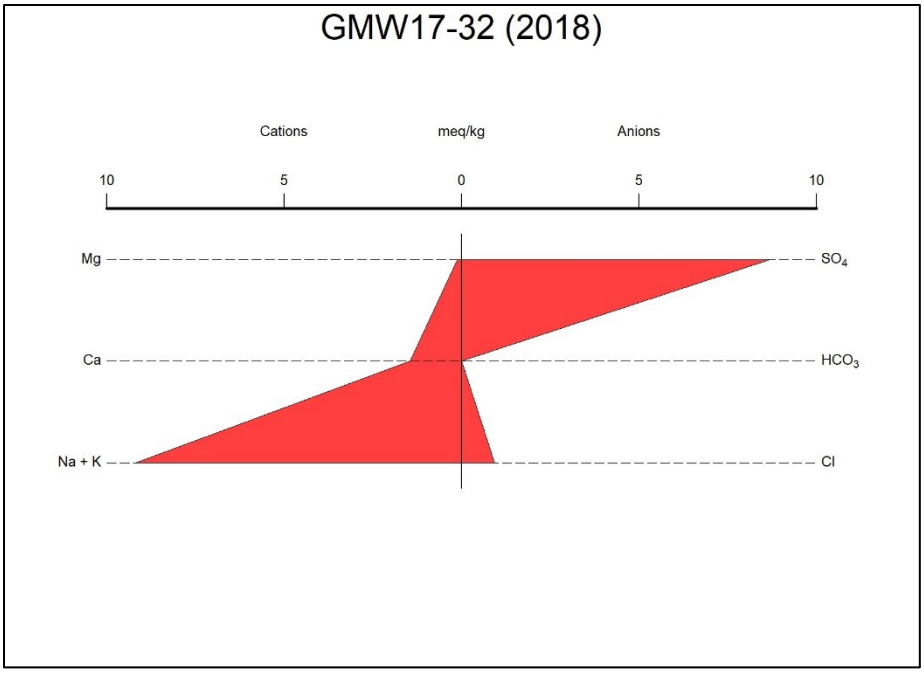


Figure 9. Stiff diagram for GMW17-32 re-samples

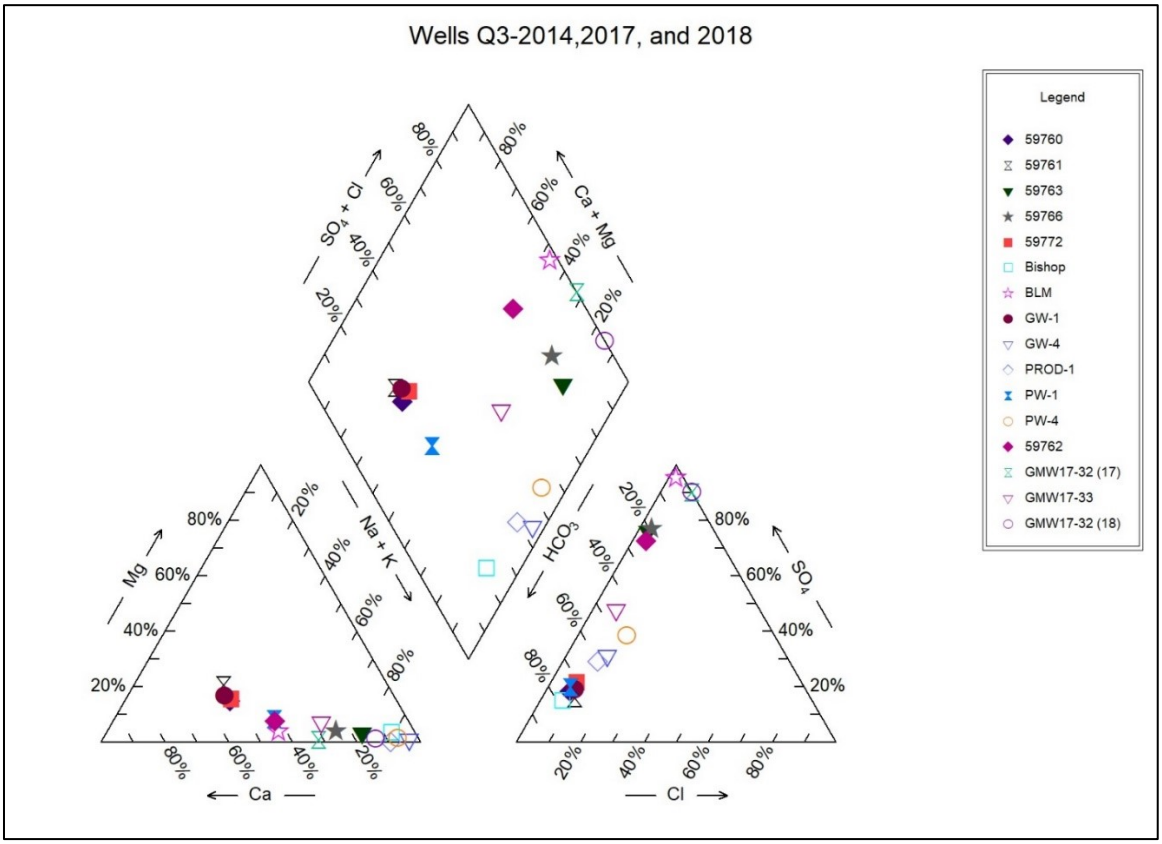


Figure 10. Piper Diagram with re-sampled GMW17-32

3.7. Comparison of Water Quality Results

The water quality data from the initial sampling can be compared to the data from the re-sampling to assess variability. An analysis of the data revealed that 47 out of a total of 83 parameters are significantly different between the two sampling events. Samples are considered to be significantly different if two conditions apply: (1) the original and/or re-sampling results are greater than five times the laboratory minimum detection limit (MDL) and (2) the percent difference between the results is equal to or greater than 20%. The number of significantly different parameters suggests that re-development efforts affected the water quality obtained from the well. The number might also reflect natural variability.

4. CONCLUSIONS

1. The deep downgradient well GMW17-32 was successfully completed per the *Final Work Plan for Grassy Mountain Monitoring Wells.*

2. The 12-inch diameter well bore was drilled to a total depth of 1,004 feet. The bore encountered silicified siltstone and mudstone, along with arkose, clay, sinter, and tuff. Water was encountered at a depth of 235 feet, estimated to be approximately 25 gpm by air-lift pumping. There was no evidence of additional water below this depth.

3. Drilling was difficult due to the hard, silicified lithology, with layers of swelling clay and zones of fractured rock that resulted in loss of circulation and sloughing conditions.

4. An unstable bore required the installation of an 8-inch steel casing to a depth of 655 feet, sealed to ground surface. A nominal 8-inch diameter open hole was re-drilled to 900 feet.

5. The well was completed with a single string of nominal 5-inch diameter flush-joint schedule 80 PVC casing and screen. The screen was set from a depth of 678 to 718 feet. Screen placement was shallower than planned due to caving hole conditions. Filter pack was placed around the screens. The PVC casing was sealed from the top of the filter pack (688 feet) to a depth of 287 feet.

6. The well was initially developed by bailing and pumping with the test pump.

7. The well was test pumped for a total of just over 2 hours. The pumping rate started out at 2.5 gpm, but had to be ultimately valved back to less than 1 gpm to enable three casing volumes to be pumped out before sampling.

8. Test pumping suggests an aquifer transmissivity of between 0.6 and 5 gpd/ft and a hydraulic conductivity ranging from 0.002 to 0.015 ft/d. The transmissivity and conductivity values are considered to be very low.

9. No water level response was observed in any nearby monitoring wells during testing of the well.

10. The water level in the well is still recovering from testing and has not yet reached steady-state conditions. The true piezometric surface is not known at this time.

11. High pH and conductivity values measured during test pumping along with the appearance of turbid water suggested that the well was not adequately developed after construction.

12. Initial sampling had four analytes exceed their respective MCL, including antimony, arsenic, chromium, and lead; both the total and dissolved concentrations of antimony and arsenic exceeded the MCL.

13. The groundwater has a sodium-potassium sulfate (Na/K-SO4) water quality signature.

14. The well was re-developed by re-installing the test pump and pumping the well until the water reached the pump suction six times during a seven-day period.

15. After re-development, the water pumped from the well had a lower pH and conductivity, which along with better water clarity suggests that the re-development has had a positive effect on water quality. The pH was still considered to be above normal.

16. Following re-development, a total of two analytes exceed their respective MCL, antimony and arsenic. Both the total and dissolved concentrations of antimony and arsenic exceeded the MCL.

17. The re-sampled groundwater has a sodium-potassium sulfate (Na/K-SO4) water quality signature, same as the original sample.

18. Over half of the parameters sampled for were significantly different before and after re-development, which suggests that re-development efforts affected the water quality obtained from the well.

5. DISCUSSION

The re-development pumping of GMW17-32 appears to have removed residual cuttings, sediment, and other materials from the screen and filter pack. Despite the apparent improvement, the water quality produced from the well is still probably affected by inadequate development. The well's usefulness as a water quality sampling location is therefore currently limited, but it can serve as a long-term water-level monitoring location.

Aquifer characteristics make development of GMW17-32 very challenging. The aquifer does not yield adequate water to completely flush residual drill cuttings or fluids from the filter pack and nearby formation. Similar poor well production has also been observed in the nearby deep well 59762. So, while water quality results may not be representative of the formation water, the construction and testing of GMW17-32 indicates that the silicified siltstone and sandstone, while saturated, has very limited water-bearing potential and a very low hydraulic conductivity. In fact, the water-bearing strata should not be considered an aquifer in the sense of a sustainable water-bearing lithology. The water that is present

in the rock is quickly dewatered, with a very slow recharge and recovery. The usefulness of water quality data from this deep saturated zone is therefore questionable. The most recent static water level from June 2018 was measured at a depth of about 620 feet, equal to an elevation of 3,080 feet. The water level in the well is still recovering, with a final water surface elevation expected to be at or below the anticipated bottom of the mine at 3,100 feet.

There is no evidence to suggest a well drilled in the vicinity of the deposit will yield more water. The nearby well 59762 produced a similar yield as GMW17-32 when tested. The recently completed upgradient deep well was dry.

An attempt could be made to perform more development on the well to obtain more reliable water quality samples. There appears to be two options for additional well development.

- The first option is additional pumping, but this approach has had limited success and is very time consuming as it is limited by low well capacity. It could take weeks to months of pumping to adequately develop the well.

- The other option is to flush the well with water from another source in an attempt to clear the screen and filter pack of residual cuttings and sediment. The recommended approach would be to inject one casing volume of water. Water would be introduced and monitored until pre-injection water levels are obtained, indicating that water was forced through the screen and into the filter pack. Then two casing would be pumped out, one volume for the water originally in the well and one volume for the introduced water. This process would be repeated until a water pH of around 8 is achieved. The goal would be to introduce enough water to clear the screen and filter pack but limit the volume of water entering the formation since this water would have to be pumped out to obtain a water sample representative of the formation water. If and when a normal pH is measured, an additional 3 casing volumes would be pumped from the well to ensure that whatever volume of water was introduced would also be pumped out. The volume of water introduced into the well would be carefully monitored.

  The proposed source of injection water is Prod-1. This well is capable of providing enough water to conduct this development. There is also seven quarters of sampling data from this well so its water quality is well understood if needed to assess if all the introduced water has been removed from the well.

Although the additional efforts described above could be put towards developing this well, the well may better be suited to function strictly as a water level monitoring location. Even if development were able to achieve water quality samples representative of the water-bearing strata, the usefulness of this information is questionable given the limited hydraulic connectivity of the strata, low hydraulic conductivity, and poor recharge. However, construction and testing of the well has provided very useful information describing the hydrogeological characteristics of this deep saturated zone.

Attachment A
State of Oregon Monitoring Well Report

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125169

START CARD # 1036039

(1) LAND OWNER

Owner Well I.D. GMW-17-32

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

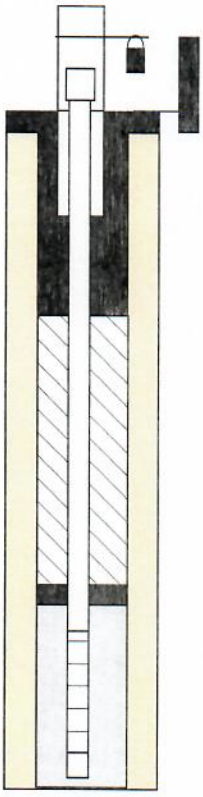
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 718.00 ft. Special Standard ☒



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 118

CASING
Dia. 12 From ☒ 2.5 To 118
Gauge .250 Wld Thrd
Material ◉ Steel ○ Plastic ☒ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ○ Steel ○ Plastic ☐ ☐

SEAL
From 0 To 118
Material Cement
Amount 66 Sacks Grout weight 15.6

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 678 To 718
Slot Size 0.020

FILTER
From 668 To 670 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

◉ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
2		720	1
0.5	50	715	6

Temperature 60 °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer SPF Water Engineering

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67240000 DMS or DD
Long ° ' " or -117.36157000 DMS or DD
○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/6/2017		665

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found 244.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
9/10/2017	244	355	20		244
10/1/2017	665	720	2		665

(8) WELL LOG

Ground Elevation _____

Material	From	To
soft brown sandy dirt	0	5
soft clay white & green	5	25
hard green sandstone	25	37
soft clay red yellow orange	37	62
hard layers sandstone red & white	62	101
hard fractured sandstone many	101	141
hard red & white mudstone	141	148
hard red & white sandstone	148	159
soft clay red tan yellow	159	202
med. hard red yellow sandstone	202	238
hard fractured blk rock w/clay strips	238	266
soft brown & white clay	266	280
hard black rock	280	291
soft white clay	291	306
blk fractured rock w/clay strips	306	336
brwn glassy rock frctrd w/brn cly lyrs	336	355
int, layers clay & brown rock	355	397
hard layers sandstone brown	397	476
hard grey sandstone	476	531

Date Started 8/29/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically) _____
Signed TONY HACKETT (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically) _____
Signed SAM P KINGREY (E-filed)
Contact Info (optional) _____

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L 125169

START CARD # 1036039

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	1004

FILTER PACK

From	To	Material	Size
670	719	SILICA SAND	10/20

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Cement	0	460	376	S	15.6
C5	287	668	65	S	14.1
Cement	460	680	9	yds	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	5	☒	2	678	sch80	○	◉		☒
◉	○	8	☒	1	655	.250	◉	○	☒	
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		
○	○						○	○		

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
soft white grey clay	531	568
fractured black rock w/clay strips	568	628
fractured brown rock	628	641
brown rock	641	653
hard black rock	653	663
1' strips sandstone & clay brown	663	719
soft clay tan white & grey	719	764
brown hard sandstone	764	795
soft brown clay	795	819
hard black rock	819	847
soft grey clay	847	861
sandstone layers brown red	861	911
soft grey clay	911	929
hard grey clay	929	932
med. hard white clay	932	945
hard claystone	945	952
soft white clay	952	967
grey claystone	967	975
soft white clay	975	985
hard grey claystone	985	1004

Comments/Remarks

see attached special standards request for seal, sand filter and bottom hole completion, see also diagram of well in special standards. Additional drillers
1) Jake Kingrey
2) David Dutcher

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

November 2, 2017

SAM KINGREY WWC #1899
DOWN RIGHT DRILLING & PUMP INC
6025 LITTLE FREEZEOUT ROAD
CALDWELL, IDAHO 83607

FINAL ORDER

Dear Mr. Kingrey:

The Special Standards Request Form you submitted for owner: Calico Resources USA Corp., Start Card number 1036039 is hereby approved for the following: You may construct this monitoring well as outlined in your completed Special Standards Request Form dated October 24, 2017. You may seal the 5 inch diameter schedule 80 pvc casing inside the 8 inch diameter steel casing as requested. A stipulation for this request approval is that the 5 inch casing shall have centralizers at a minimum of 60 foot intervals and the 5 inch casing shall be sealed with cement grout from the top of the filter pack seal upward 300 feet. The reported sloughing of the borehole below 720 feet may be left in place at this time. This Special Standards Request is a modification of the Special Standards Request approval letter dated September 29, 2017. A copy of your Special Standards Request Form is enclosed.

Verbal approval of this Special Standards Request was provided on October 24, 2017.

The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions concerning this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Bob Maynard, East Region Well Inspector
File

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Attachment B
Lithologic Log

CALICO RESOURCES

GRASSY MOUNTAIN PROJECT

Page 1 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD83~~ East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
00- 05		OVb	10	NIL	NIL	NIL	WK	CALCITE ON FX	S			OVERBURDEN - MIXED LITHO	
~~05-10~~ 5-7 7-10		Tgls	90				NIL		M			OLIVE-GRAY-GREEN SILTST-CLAYST & CLAY	
10- 15		Tgls						T	W				
15- 20								NIL	NIL				
20- 25			20%					"	"			80% SANDST 20% CLAYST OLIVE GRN & BLUISH GREEN	
25- 30			0					"	"				
30- 35								"	"			BLUE-GREEN SST	
35- 40				T				"	"				
40- 45		Tgs CLAY	100	NIL			M	"	"			CLAY - REDDISH GRAY 10% SLTST & TUFF	
45- 50			90				S	"	"			CLAY - RED 10% SLTST & TUFF	
50- 55			90				S	"	"				
55- 60			90				S	"	"				
60- 65		SINTER	5%	S			M	"	"			90% SINTER 10% TUFF & SLTST TAN SINTER RED CLAY	
65- 70				S			W	"	"				
70- 75		CLAY	90%	NIL				"	"			BROWNISH-GRAY CLAY	
75- 80								"	"				
80- 85								"	"				
85- 90		TUFF & SLTST	30%	W			T	"	"			30% CLAY 10% SINTER 70% TUFF & TUFFACEOUS SLTST	
90- 95			30%	W			T	"	"				
95-100		CLAY & TUFF	90%	NIL			M	"	"			90% CLAY 10% TUFF	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 2 of 10 Hole No. GMW17-2 Depth _____

UTM ~~NAD83~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Lithology Tgs

Depth	Graphic	Lithology	Clay %	Silica	pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
100-105		ARK 50 CLAY 20 TUFF 20	30%	0	0	NIL	M	0	0			50% ARK 20% CLAY 20% TUFF 10% SINTER REDDISH GRAY	
105-110		TUFF 60 ARK 40	10%	0			M					60% TUFF & TUFFACEOUS SLTST 40% ARK RED-GRAY	
110-115		TUFF 70 ARK 30	NIL	W			M					70% TUFF & TUFFACEOUS SLTST - 30% ARK RED-GRAY & CREAM	
115-120		ARK 60 TUFF 40	10	W			S					60% ARK & SST 40% TUFF & XTL TUFF RED RED-GRAY & GREENISH	
120-125		ARK 60 TUFF 40	10	W			W					↓	
125-130		ARK 50 SINTER 25 TUFF 25	10	M			S					50% ARK & SST 25% SINTER 25% TUFF RED, BRWN, GRAY	
130-135		ARK 75 TUFF 25	10	W			S					75% ARK & SST 25% TUFF RED, BRWN	
135-140		TUFF & TUFFAC SANDST	0	W			M					TUFF & TUFFAC - SANDST w/ REED CASTS & ORGANIC TRASH RED - BROWNISH RED & CREAMY-GRAY	
140-145		↓	0	W			S					↓	
145-150		↓	0	W			S					↓	
150-155		SINTER 75 TUFF 25	0	S			M					75% SINTER - BROWN - LT BROWN 25% TUFF	
155-160		↓	0	S			M					↓	
160-165		SIN 50 TUFF 50	0	S			S					50% SINTER 50% TUFF	
165-170		SIN 50 TUFF 25 CLAY 25	25	S			S					50% SIN 25% TUFF 25% CLAY	
170-175		↓	25	S			S					↓	
175-180		CLAY	100	0			M					CLAY - REDDISH BROWN	
180-185		↓	100	0	↓		M					↓	
185-190		↓	80	0	T		T					CLAY - GRAY - BROWN - YELLOW	
190-195		↓	80	0	T		T					↓ ↓	
195-200		SINTER	50	0	T	↓	W	↓	↓			CLAY 50% SINTER 50% MIXED COLORS	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 3 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD83~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	SULF OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
200- 05		CLAY SINTER ARK	30	0	SULF T	0	W					CLAY 30% SINTER 20% ARKOSE 50% F.G. SULF T	
205- 10		↓	30	↓	↓	↓	W					↓ ARKOSE - LT. BROWN	
210- 15		ARK	0	↓	↓	↓	0					↓	
215- 20		SINTER SLTST TUFF	ARG W	M	SULF TR		T					MIXED SINTER, SILIC SLTST, TUFF, TUFFACEOUS SLTST & MINOR ARKOSE FEOx T SILIC M ARG W IN TUFF F.G. SULF TR	
220- 25		↓	↓	↓	↓	↓	↓					LT GRAY, BROWNISH GRAY & DK. GRAY	
225- 30												↓	
230- 35												↓	
235- 40												↓	
240- 45		↓	↓	↓	↓	↓	↓					↓	
245- 50		SLTST & TUFF	↓	MOD	↓	↓	T					AS ABOVE BUT W/O SINTER	
250- 55		SLTST & TUFF & CLAY	20	↓	↓	↓	↓					↓	
255- 60		SLTST & TUFF	ARG W	↓	↓	↓	↓					↓	
260- 65		↓	↓	↓	↓	↓	↓					↓	
265- 70		↓	↓	↓	↓	↓	↓					↓	
270- 75		↓	↓	↓	↓	↓	↓					↓	
275- 80		SLTST & MUDST	0	S	↓	↓	T					DK GRAY TO BLACK & DK BROWN SLTST & SILIC'D SLTST & BLACK MUDST	
280- 85		↓	0	↓	↓	↓	T					↓	
285- 90		↓	0	↓	↓	↓	0					↓	
290- 95		10% CLAY SLTST & MUDST	10%	↓	↓	↓	0					AS ABOVE & 10% CLAY	
295-300		SLTST & MUDST	0	↓	↓	↓	0					AS ABOVE BUT NO CLAY	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 4 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD83~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	Sulfide pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
300- 05		SLTST MUDST	0	S	F.G. SULF T	0	0	0	0			300-325 - GRAY - DK GRAY - BLACK SILIC'D SLTST & MUDST F.G. SULFIDES T	
305- 10			10										
310- 15			0										
315- 20			0										
320- 25		AS ABOVE & CLAY	10%										
325- 30		80% SINTER 20% TUFF	0	INT	0							SINTER / TUFF LT GRAY & LT BROWN	
330- 35			0		0							MIXED SINTER - SLTST - TUFF	
335- 40		CLAY & SLTST	50	W	SULF W PY T							50% CLAY 50% SLTST F.G. SULF T	
340- 45		50 SLTST 50 SINTER	0	S	0							SLTST & SINTER LT BROWN SINTER GRAY SLTST	
345- 50		20 SLTST 80 SINTER	0	INT	0							PREDOM SINTER LT BROWN	
350- 55			0		0								
355- 60			0	INT	0								
360- 65			10%	S	0								
365- 70			0	S	SULF T							LT. BROWN & LT GRAY	
370- 75			30%	S								SINTER & CLAY	
375- 80		SLTST & TUFF	10%	M								SLTST & TUFF SILIC'D SLTST MIXED LT BROWN & GRAY	
380- 85			0	W									
385- 90			0										
390- 95			10%										
395- 00			0										

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 5 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD27~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	SULF OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
400- 05		SLTST	0	W	T	0	T					SLTST & TUFF MED TO LT BROWN	
405- 10		TUFF			0							80% TUFF 20% SLTST LT. BROWN	
410- 15		ARKOSE		M								70% ARKOSE & SS 30% TUFF	
415- 20												90% ARKOSE 10% TUFF LT. BROWN & MINOR GRAY	
420- 25												420-440 ARKOSE WHITE, OFF-WHITE & LT BROWN	
425- 30							T						
430- 35							T						
435- 40							T						
440- 45							T						
445- 50												WHITE ARKOSE WHITE	
450- 55													
455- 60													
460- 65					T		W						
465- 70					T		W					ARKOSE & SLTST MIXED WHITE, GRAY & FeOx CHIPS	
470- 75		SINTER MUDST		S	T		T					SINTER MUDST	
475- 80				S	T		T						
480- 85		CLAY SLTST-MUDST	20%	M	T		T					CLAY & SLTST & MUDST	
485- 90		NO SAMP										NO SAMPLE	
490- 95		CLAY SLTST MUDST	10%	M	T	0	T						
495-500		SLTST, ARK MUDST, SIN	0	M	T	0	W					MIXED SLTST, MUDST, ARKOSE, SINTER	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 6 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD27~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	SULF Silica	OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
500- 05		MIXED	10%	M	T	0	W					MIXED SLTST, MUDST, ARKOSE, SINTER & CLAY BROWN GRAY, BLACK, WHITE	
505- 10		↓	10	↓	↓	↓	↓					↓	
510- 15		↓	10	↓	↓	↓	↓					↓	
515- 20		ARKOSE	0	M	0	0	T					GRAY ARKOSE / GRAY	
520- 25		↓	↓	↓	↓	↓	↓					↓	
525- 30		↓	↓	↓	↓	↓	↓					↓	
530- 35		↓	↓	↓	↓	↓	↓					↓	
535- 40		↓	↓	↓	↓	↓	↓					↓	
540- 45		ARKOSE	↓	W	↓	↓	↓					LT. BROWN & GRAY SANDY ARKOSE	
545- 50		ARKOSE SLTST TUFF	↓	M	T	↓	↓					MIXED ARK, TUFF, SILICD SLTST & SINTER / MIXED GRAY, BLACK, BROWN	
550- 55		SINTER	↓	M	↓	↓	↓					↓	
555- 60		TUFF ARK SLTST	↓	W	↓	↓	↓					TUFF, ARK & SLTST	
560- 65		↓	↓	W	↓	↓	↓					↓	
565- 70		↓	↓	W	↓	↓	↓					↓	
570- 75		AS ABOVE W/ CLAY	20%	0	↓	↓	↓					TUFF, ARK, SLTST & 20% CLAY	
575- 80		↓	↓	0	↓	↓	↓					↓	
580- 85		↓	↓	0	↓	↓	↓					TR. PINK ARG ALT'D TUFF	
585- 90		↓	↓	T	↓	↓	↓					TUFF, ARK, SLTST, CLAY	
590- 95		↓	↓	T	↓	↓	↓					↓	
595-600		↓	↓	T	↓	↓	↓					↓	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 7 of 10 Hole No. GMW17-32 Depth _____

UTM ~~XXXXXX~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. McGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	SULF OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
600- 05		SLTST TUFF ARK	0	W	T	0	T					BLACK SLTST & GRAY TUFF & GRAY ARKOSE	
605- 10			0										
610- 15			0									605-620- TR. BLUE GREEN ARG ALT TUFF	
615- 20			0										
620- 25		CLAY SLTST-ARK TUFF	20	0			T					AS ABOVE W/CLAY GRAY, BLACK, TAN	
625- 30			20	0			W						
630- 35			20	T									
635- 40			20	T									
640- 45			10	0			T						
645- 50			10	0			T						
650- 55			20	0			T						
655- 60	NO	SAMPLE											
660- 65	"	"											
665- 70		CLAY SLTST-ARK TUFF	20	T	T	0	T					CLAY + MIXED SLTST & TUFF & ARK GRAY, BLACK, TAN TR. EUHED PY XTLS TR. BLUE GREEN ARG ALT TUFF	
670- 75			20	T	T	0	T						
675- 80	NO	SAMPLE											
680- 85	"	"											
685- 90		SAME AS PREV.	20	T		0	W					SAME AS PREV.	
690- 95	NO	SAMPLE											
695-700	"	"											

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 8 of 10 Hole No. GMW17-32 Depth _____

UTM ~~000000~~ East _____, North _____ Elev _____ Azimuth — Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	SULF OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
700- 05		ARK SLTST & TUFF	0	M		0						ARKOSE SLTST SILIC'D SLTST - TUFF	
705- 10			0	M									
710- 15			0	M	T		T						
715- 20			0	M	T		T						
720- 25	NO	SAMPLE										NO SAMPLE	
725- 30	NO	SAMPLE											
730- 35		CLAY, ARK SLTST, TUFF	20	0	T		T					GRAY CLAY MIXED W/ TUFF, SLTST & ARKOSE	
735- 40			20	T	T		T					GRAY, BLACK & SOME ORANGE FEOX	
740- 45			20	W	SULF T PY 1%		T						
745- 50			50	0			T					745-760 : 10% PINK ARG ALT TUFF	
750- 55			50	0			0						
755- 60			50				T						
760- 65			20				T						
765- 70			20				T						
770- 75			20				T						
775- 80			20		2%								
780- 85			10		5% PY								
785- 90			10		1% PY								
790- 95			10		3% PY								
795-800			20	T	1% PY								

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 9 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD27~~ East _____, North _____ Elev _____ Azimuth _____ Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

Depth	Lithology Graphic	Lithology	Clay %	Silica	SULF OR pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
800- 05		CLAY, ARK SLTST, TUFF	20	M	3% PY	0	T					GRAY CLAY MIXED W/ TUFF, SLTST & ARKOSE 10% SILIC'D SLTST 10% PINK CLAY & ARG ALT'D TUFF	
805- 10		↓	20	M	T		T					↓	
810- 15		↓	40	W	T		T					↓	
815- 20		↓	40	0	SULF T		W					CLAY MIXED W TUFF, SLTST & ARKOSE VARIABLE CLAY	
820- 25		↓	30	0	↓		W					↓	
825- 30		↓	10	0	↓		W					↓	
830- 35		↓	20	T	↓		W					↓	
835- 40		ARK	0	T	PY T		T					OFF WHITE & LT BROWN ARKOSE	
840- 45		↓	0	T	0		T					↓	
845- 50		ARK 80% TUFF 20%	0	0	0		T					845-855 60% ARKOSE & SLTST 40% TUFF GRAY ARK WHITE TUFF	
850- 55		↓	5	↓	0		↓					↓	
855- 60		ARK 90% TUFF & SLTST 10%	5	↓	PY T		↓					855-900 - 90% GRAY ARKOSE 10% TUFF & SLTST	
860- 65		↓	5	↓	↓		↓					↓	
865- 70		↓	5	↓	↓		↓					↓	
870- 75		↓	5	↓	↓		↓					↓	
875- 80		↓	↓	↓	↓		↓					↓	
880- 85		↓	↓	↓	↓		↓					↓	
885- 90		↓	↓	↓	↓		↓					↓	
890- 95		↓	↓	↓	↓		↓					↓	
895-900		↓	↓	↓	↓		↓					↓	

CALICO RESOURCES **GRASSY MOUNTAIN PROJECT** Page 10 of 10 Hole No. GMW17-32 Depth _____

UTM ~~NAD27~~ East _____, North _____ Elev _____ Azimuth N/A Incline -90°

Logged by: M.F. MCGINNIS Drill Type _____ Contractor DOWN RIGHT DRILLING

DATE Start _____ Finish _____ 0=none 1 or tr=trace 2 or W=weak 3 or M=moderate 4 or S=strong 5 or Int=intense

	Lithology											
Depth	Graphic	Lithology	Clay %	Silica	pyrite	Qtz Veins	FeOx	calcite Veins	$CaCO_3$	Sample Number	Au ppm	Description/Remarks	Time
900- 05		ARK 90% 10% SLTST/TUFF	0	0	PY T	0	T					90% GRAY ARKOSE 10% WHITE & LT. GRAY TUFF & SLTST	
905- 10													
910- 15													
915- 20													
920- 25													
925- 30													
930- 35		CLAY, ARK TUFF, SLTST	10%		0		W					10% CLAY, 60% ARK 30% TUFF & SLTST GRAY & LT. GRAY	
935- 40		ARKOSE SLTST TUFF	0		0		T					935-970 - 90% GRAY ARKOSE 10% MIXED SLTST & TUFF	
940- 45			0		1%								
945- 50			0		1%								
950- 55			0		T								
955- 60			5%		T							VARIABLE CLAY	
960- 65			10%		T								
965- 70			0		PY 1%		W						
970- 75		80 ARKOSE 20 MIX	10				W					970-995 80% GRAY ARKOSE 20% MIX OF SLTST & TUFF & VARIABLE CLAY	
975- 80			20		T		W						
980- 85			0		T		T					TR PINK ARG ALT TUFF TR BLUE-GREEN ARG ALT TUFF	
985- 90			0		T								
990- 95			10		T								
995-1000		CLAY	80%		T							CLAY, ARKOSE, SLTST & TUFF GRAY - DK GRAY	

Attachment C
Photographs



Photo 1. GMW17-32 well head completion

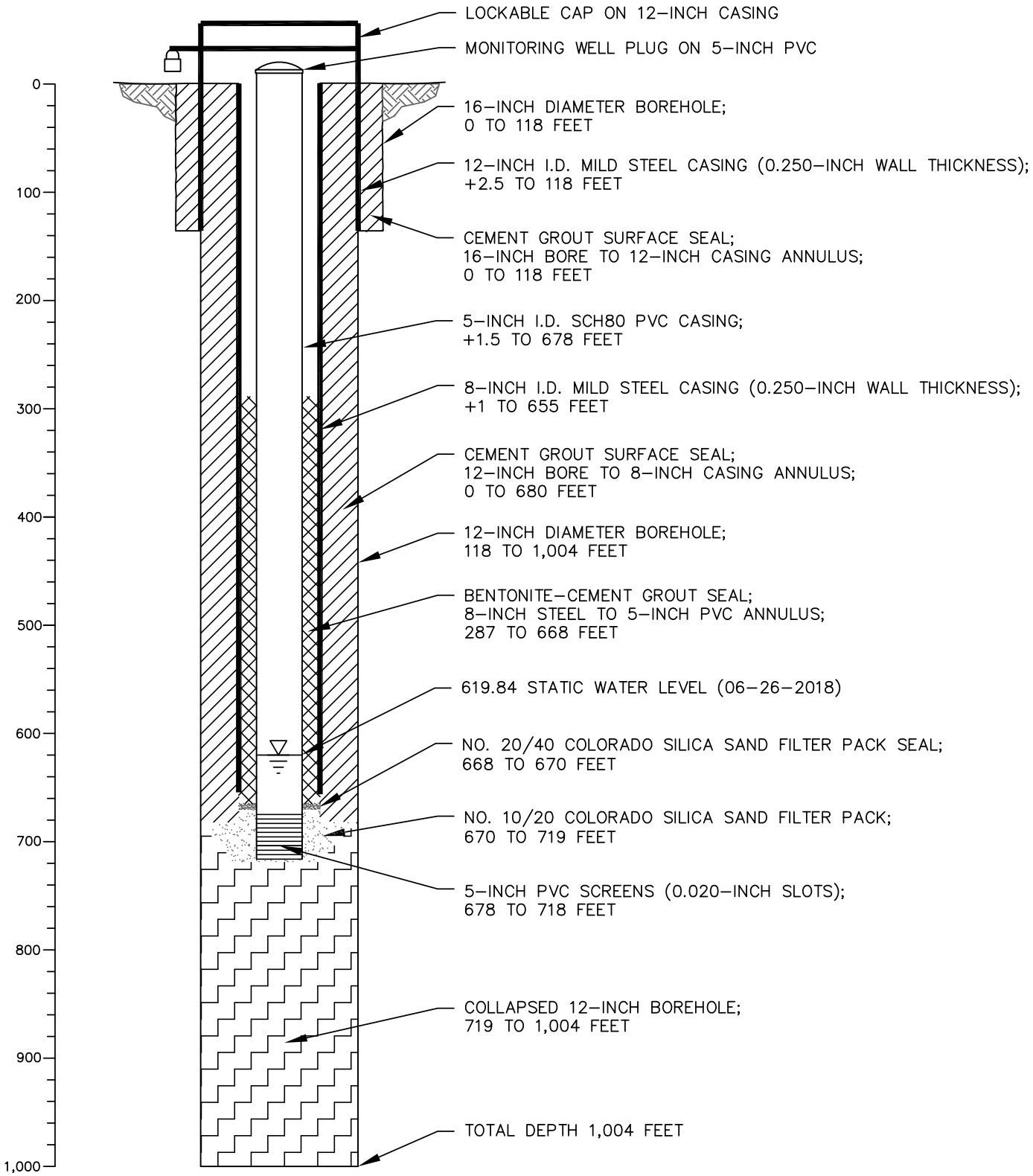


Photo 2. 5-inch and 8-inch casings



Photo 3. GMW17-32 well tag

Attachment D
As-Built Well Drawing



SPF WATER
ENGINEERING
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MONITORING WELL GMW-17-32 AS-BUILT

SCALE: NTS	PROJECT #1294.0010
DRAWN BY: STA	

Attachment E
Test Pumping Data

Grassy Mtn. GMW-17-32 Pumping Test
12/11/2017

Tested by Down Right Drilling & Pump. Supervised by Kurt Newbry (SPF Water Engineering).

Pump type: 5-HP submersible Grundfos. Pump intake set at ~717 feet.

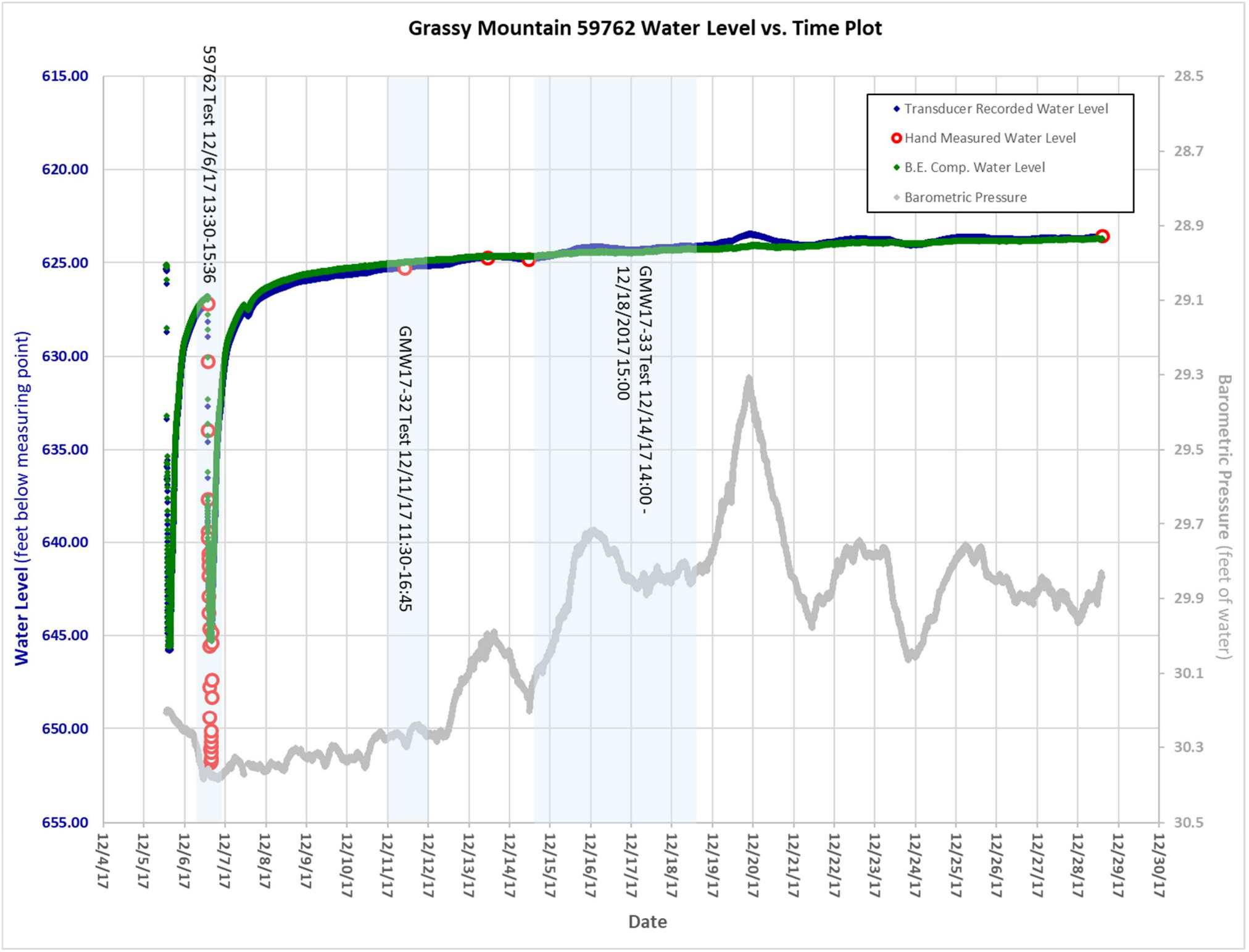
Flow measured with 5-gallon bucket. 1-inch discharge pipe.

Water level measured with non-stretch 800-foot Waterline well sounder.

Measurement point: end of 1.25-inch PVC sounding tube at top of casing

Date	Time	Date Time	ET	WL (ft bmp)	WL (ft bgl)	dd (ft)	Q (gpm)	Notes
12/11/2017	11:30	12/11/17 11:30	0	648.33	645.28	0	0	static water level
12/11/2017	11:33	12/11/17 11:33	3	655.33	652.28	7	2.5	pump on
12/11/2017	11:35	12/11/17 11:35	5	658.78	655.73	10.45	2.5	
12/11/2017	11:38	12/11/17 11:38	8	663.8	660.75	15.47	2.5	
12/11/2017	11:42	12/11/17 11:42	12	669.8	666.75	21.47	2.5	
12/11/2017	11:47	12/11/17 11:47	17	676.65	673.6	28.32	2	valved back
12/11/2017	11:52	12/11/17 11:52	22	683.6	680.55	35.27	2	
12/11/2017	12:00	12/11/17 12:00	30	688.85	685.8	40.52	2	
12/11/2017	12:07	12/11/17 12:07	37	695.1	692.05	46.77	2	
12/11/2017	12:15	12/11/17 12:15	45	700.05	697	51.72	2	
12/11/2017	12:22	12/11/17 12:22	52	700.9	697.85	52.57	1.8	
12/11/2017	12:27	12/11/17 12:27	57	704.73	701.68	56.4	2	
12/11/2017	12:37	12/11/17 12:37	67	709.24	706.19	60.91	2	
12/11/2017	12:47	12/11/17 12:47	77	715.45	712.4	67.12	2	
12/11/2017	12:54	12/11/17 12:54	84	716.32	713.27	67.99	0.8	
12/11/2017	12:57	12/11/17 12:57	87	716.97	713.92	68.64	0.8	
12/11/2017	13:07	12/11/17 13:07	97	717.8	714.75	69.47	1	
12/11/2017	13:15	12/11/17 13:15	105	717.7	714.65	69.37	0.7	pump breaking suction, pump off
12/11/2017	14:12	12/11/17 14:12	162	714.91	711.86			
12/11/2017	14:22	12/11/17 14:22	172	713.82	710.77			
12/11/2017	14:58	12/11/17 14:58	208	710.81	707.76			
12/11/2017	15:21	12/11/17 15:21	231	709.75	706.7			
12/11/2017	15:40	12/11/17 15:40	250	709.25	706.2			
12/11/2017	15:56	12/11/17 15:56	266	708.9	705.85			
12/11/2017	15:59	12/11/17 15:59	269	708.84	705.79			
12/11/2017	16:21	12/11/17 16:21	291	708.45	705.4			
12/11/2017	16:22	12/11/17 16:22	292				2	pump on
12/11/2017	16:27	12/11/17 16:27	297	709.1			2	
12/11/2017	16:31	12/11/17 16:31	301	710.8			2	
12/11/2017	16:32	12/11/17 16:32	302				2	sample water
12/11/2017	16:45	12/11/17 16:45	315					pump off

Attachment F
Water Level Graphs from Nearby Wells


Grassy Mountain 59762 Water Level vs. Time Plot
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
Hand Measured Water Level
B.E. Comp. Water Level
Barometric Pressure
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
615.00
620.00
625.00
630.00
635.00
640.00
645.00
650.00
655.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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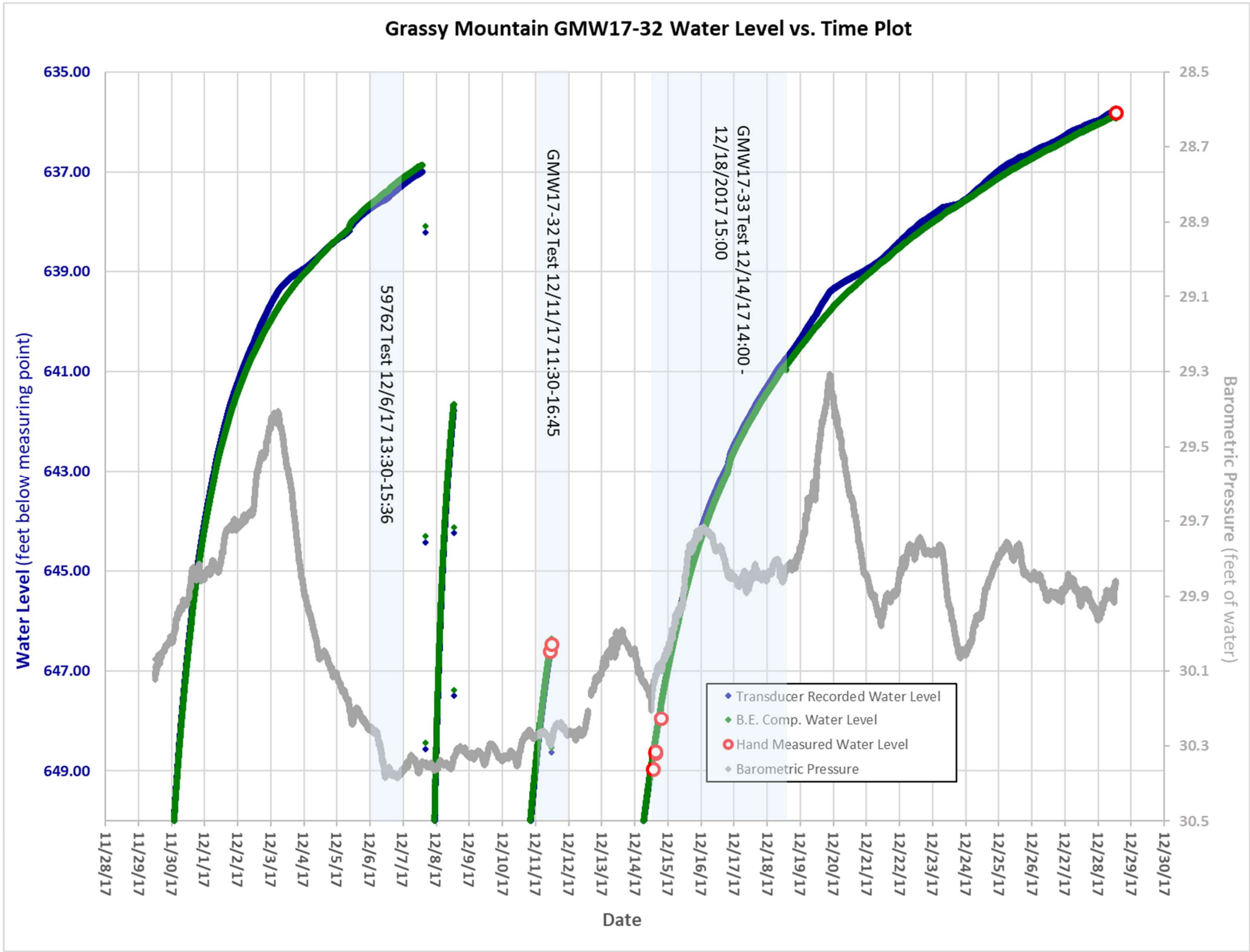
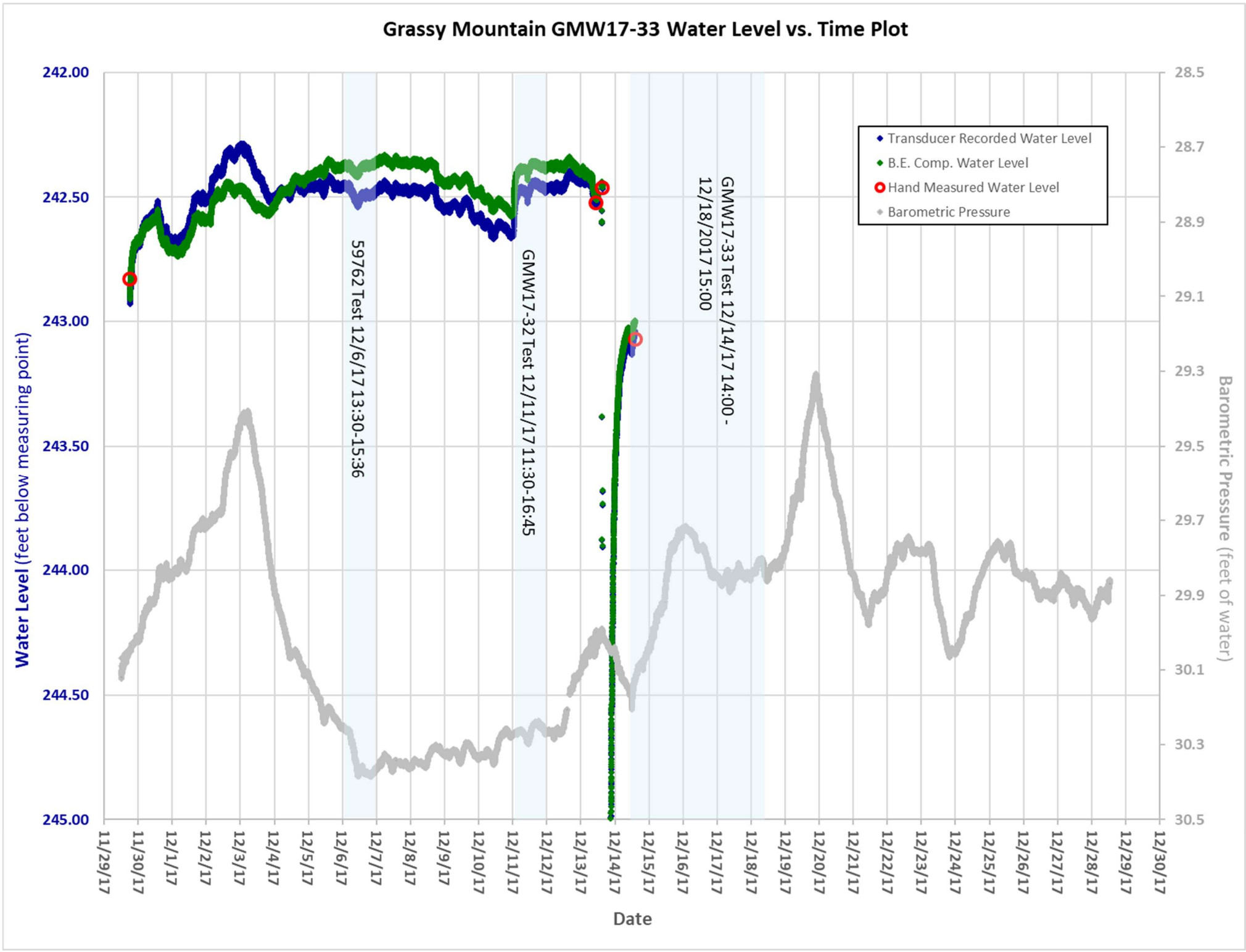
12/25/17
12/26/17
12/27/17
12/28/17
12/29/17
12/30/17


Grassy Mountain GMW17-32 Water Level vs. Time Plot
Water Level (feet below measuring point)
635.00
637.00
639.00
641.00
643.00
645.00
647.00
649.00
Barometric Pressure (feet of water)
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
12/24/17
12/25/17
12/26/17
12/27/17
12/28/17
12/29/17
12/30/17
Date


Grassy Mountain GMW17-33 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
242.00
242.50
243.00
243.50
244.00
244.50
245.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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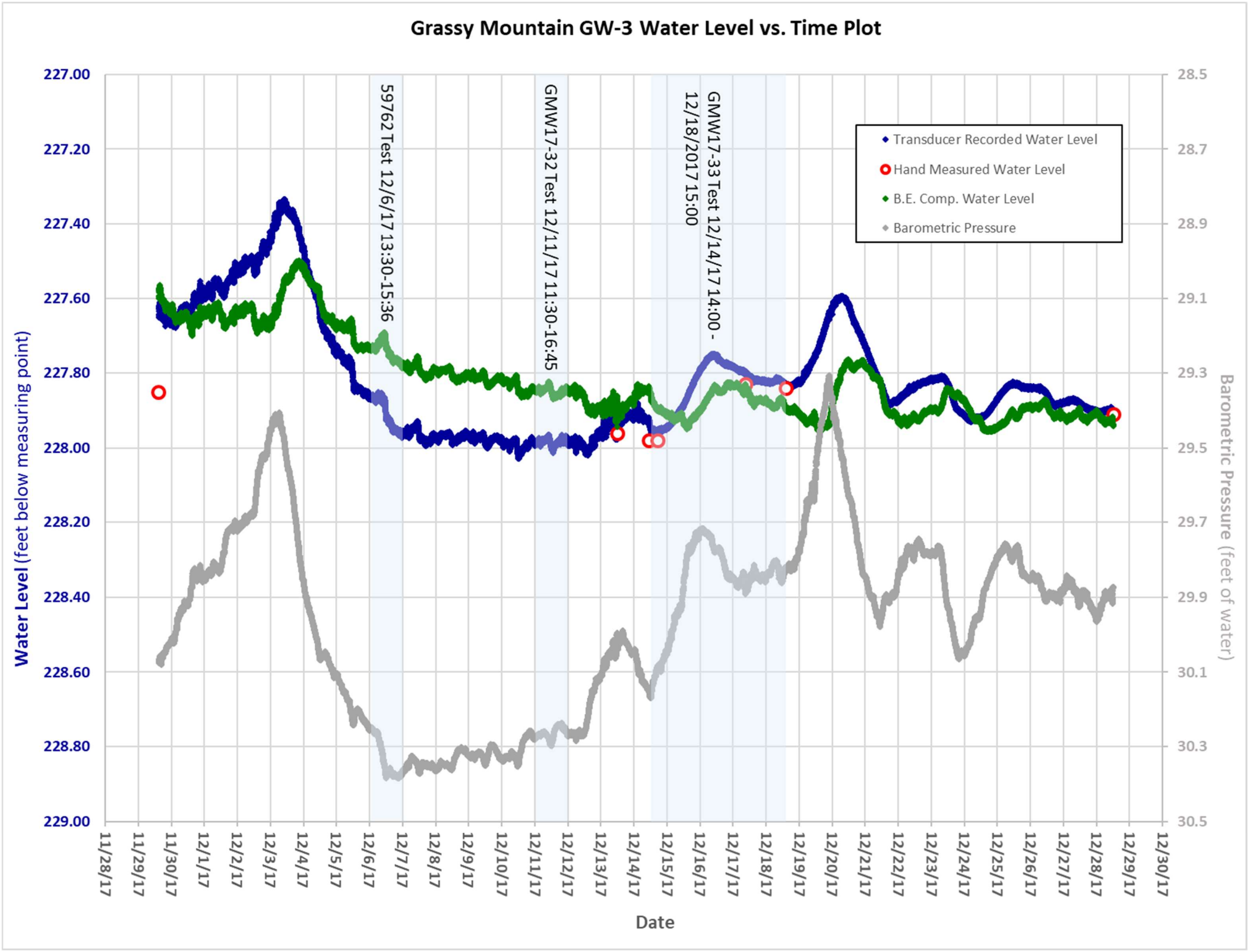
12/27/17
12/28/17
12/29/17
12/30/17


Grassy Mountain GW-3 Water Level vs. Time Plot
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Transducer Recorded Water Level
Hand Measured Water Level
B.E. Comp. Water Level
Barometric Pressure
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
227.00
227.20
227.40
227.60
227.80
228.00
228.20
228.40
228.60
228.80
229.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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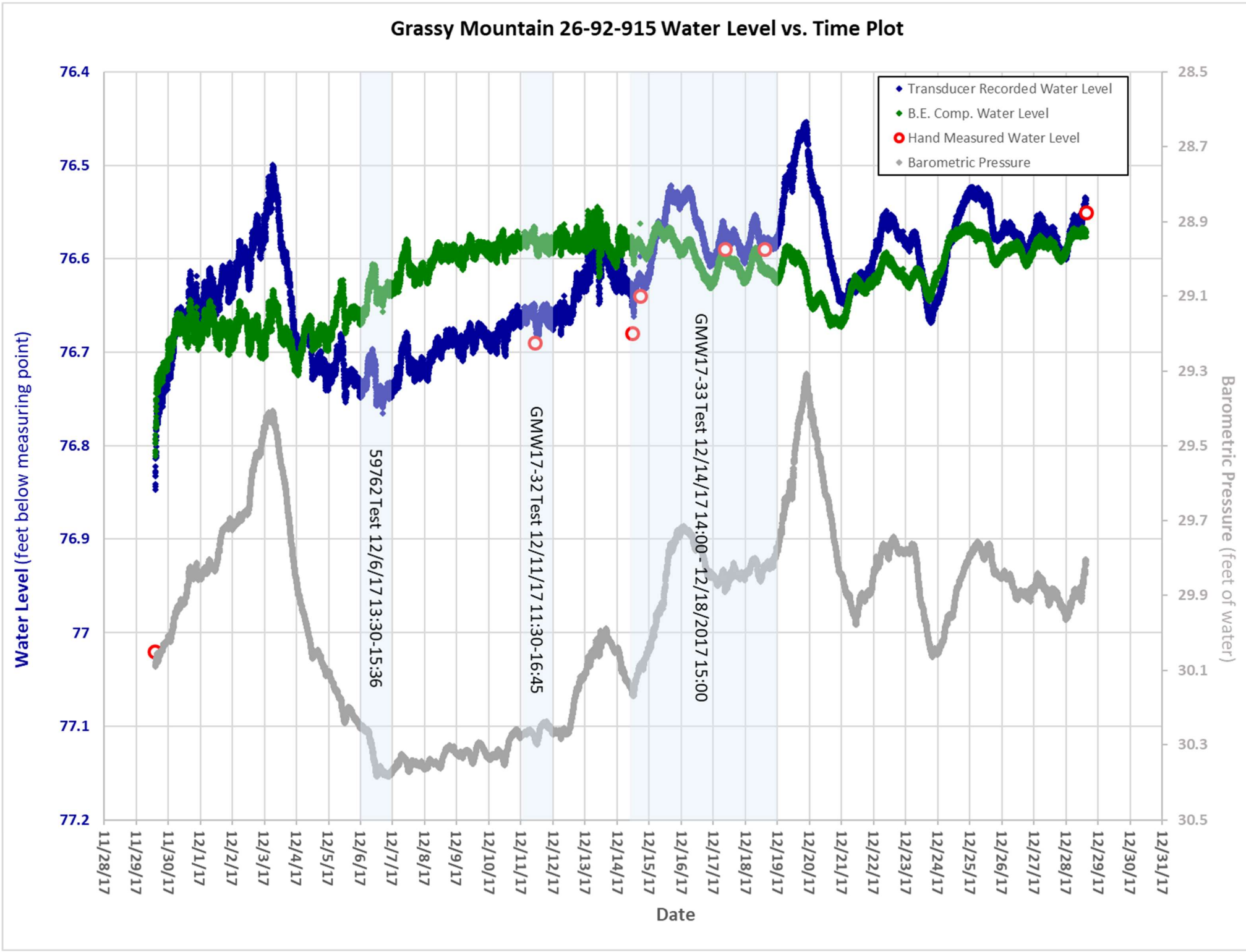
12/27/17
12/28/17
12/29/17
12/30/17


Grassy Mountain 26-92-915 Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
GMW17-32 Test 12/11/17 11:30-16:45
59762 Test 12/6/17 13:30-15:36
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
76.4
76.5
76.6
76.7
76.8
76.9
77
77.1
77.2
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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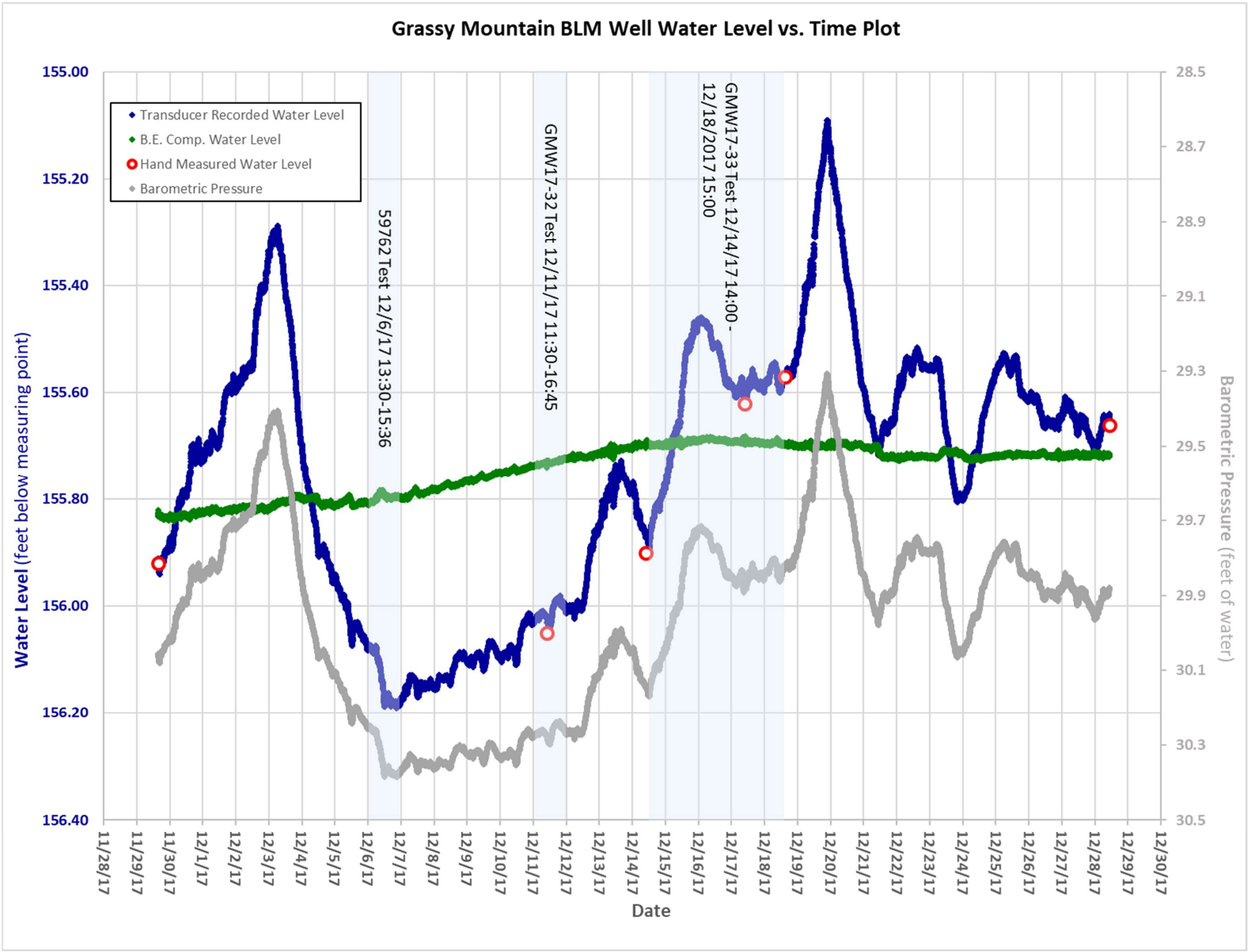
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain BLM Well Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
155.00
155.20
155.40
155.60
155.80
156.00
156.20
156.40
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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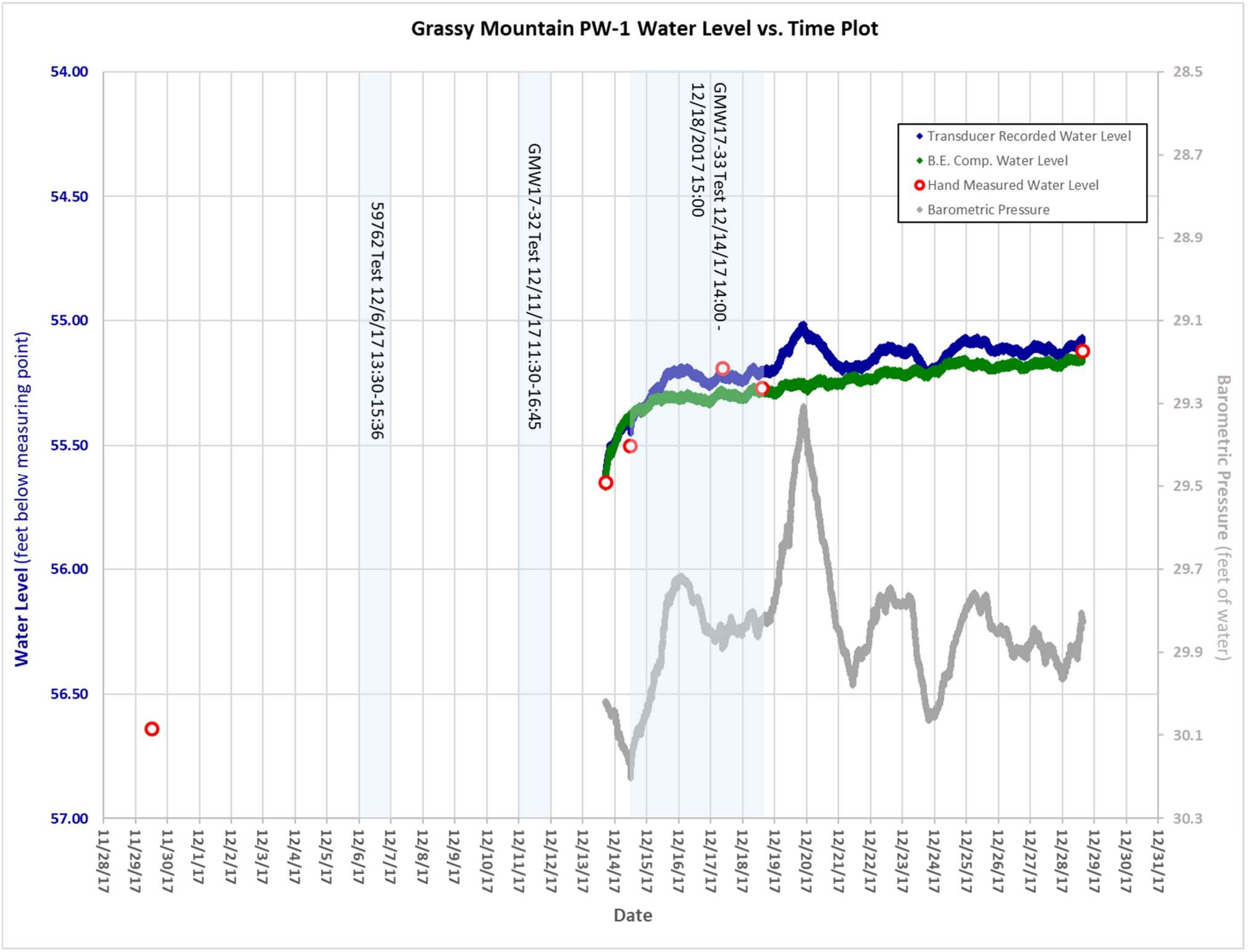
12/27/17
12/28/17
12/29/17
12/30/17


Grassy Mountain PW-1 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
54.00
54.50
55.00
55.50
56.00
56.50
57.00
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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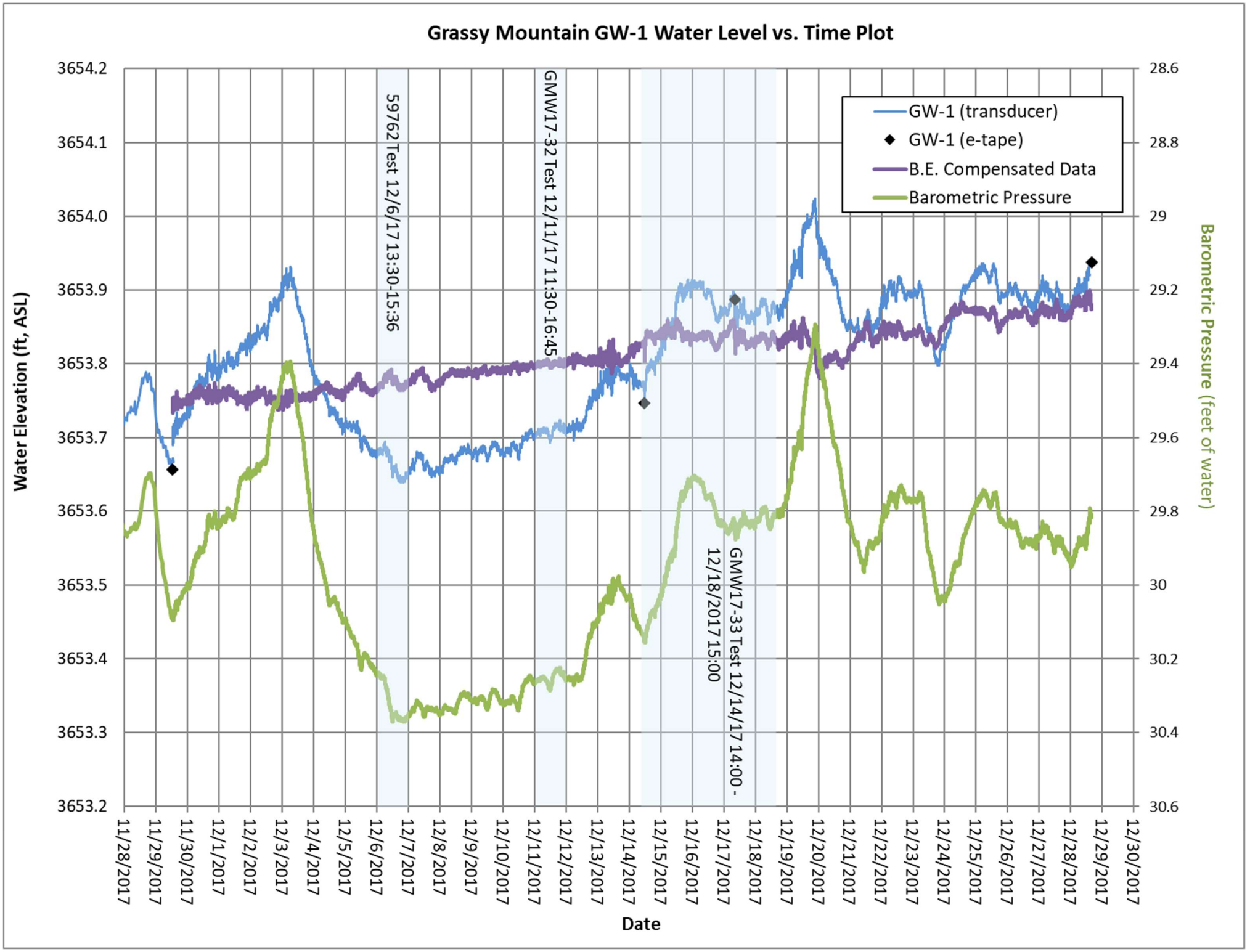
12/29/17
12/30/17
12/31/17


Grassy Mountain GW-1 Water Level vs. Time Plot
Water Elevation (ft, ASL)
Barometric Pressure (feet of water)
Date
GW-1 (transducer)
GW-1 (e-tape)
B.E. Compensated Data
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
3654.2
3654.1
3654.0
3653.9
3653.8
3653.7
3653.6
3653.5
3653.4
3653.3
3653.2
28.6
28.8
29
29.2
29.4
29.6
29.8
30
30.2
30.4
30.6
11/28/2017
11/29/2017
11/30/2017
12/1/2017
12/2/2017
12/3/2017
12/4/2017
12/5/2017
12/6/2017
12/7/2017
12/8/2017
12/9/2017
12/10/2017
12/11/2017
12/12/2017
12/13/2017
12/14/2017
12/15/2017
12/16/2017
12/17/2017
12/18/2017
12/19/2017
12/20/2017
12/21/2017
12/22/2017
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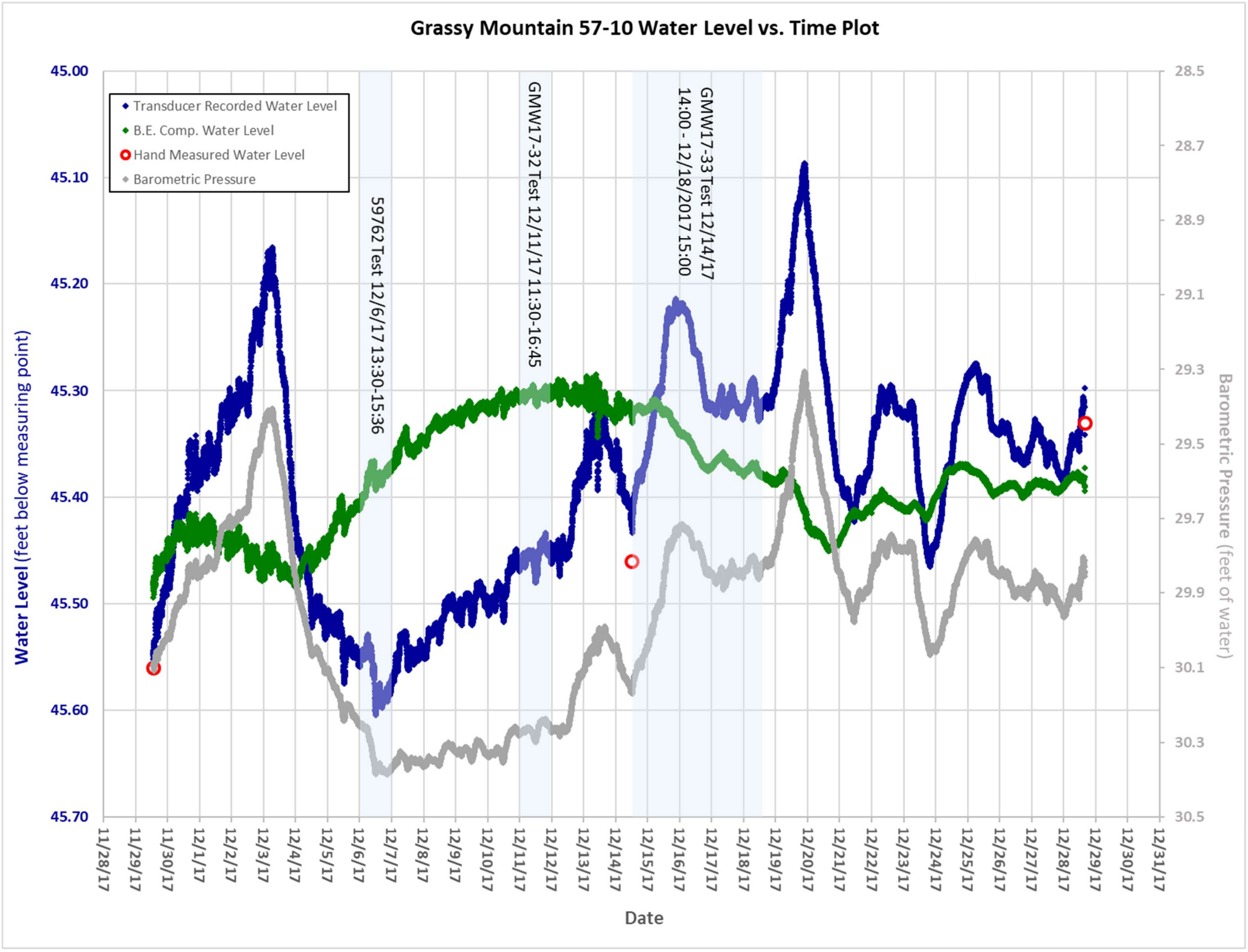
12/29/2017
12/30/2017


Grassy Mountain 57-10 Water Level vs. Time Plot
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
45.00
45.10
45.20
45.30
45.40
45.50
45.60
45.70
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
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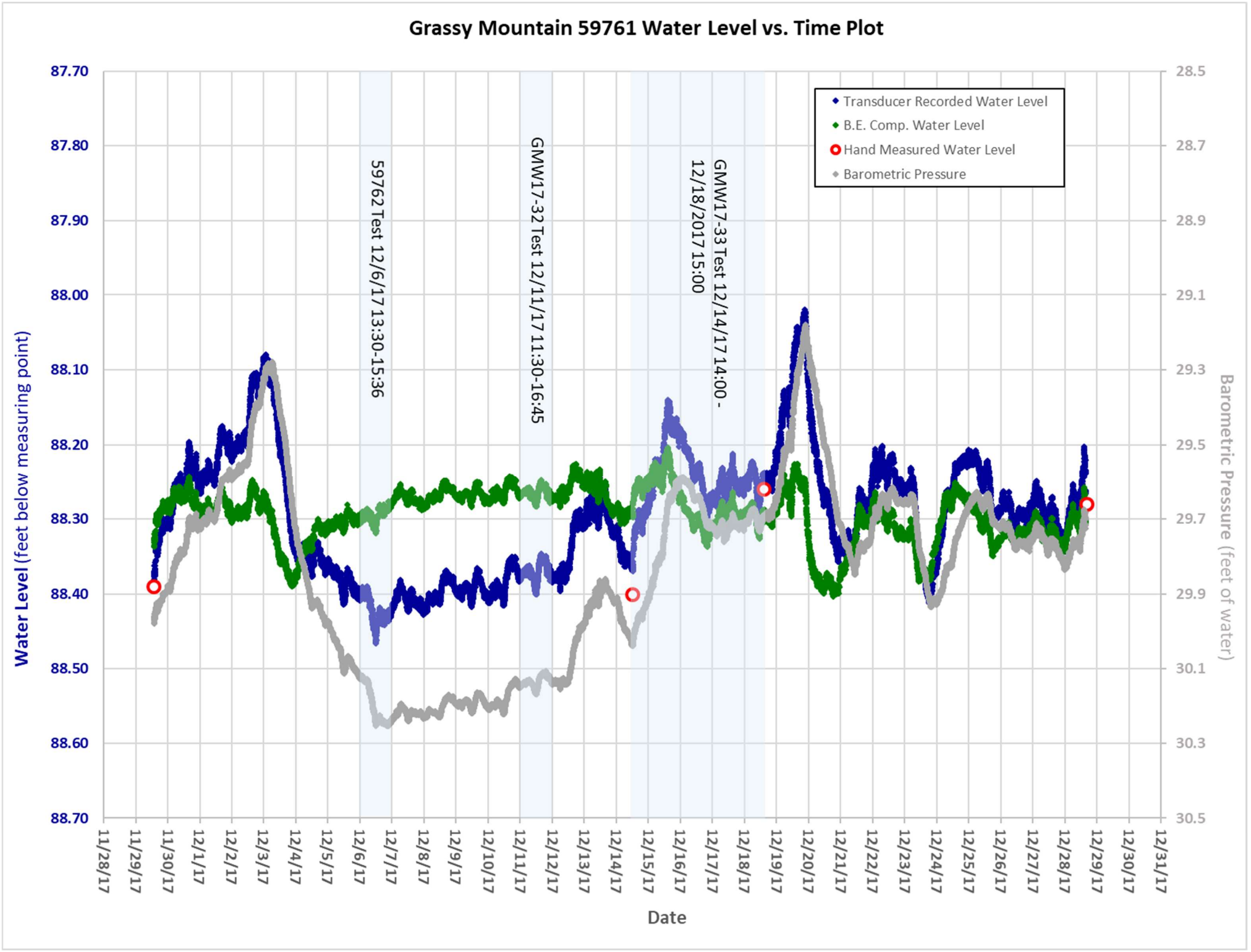
12/28/17
12/29/17
12/30/17
12/31/17


Grassy Mountain 59761 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
87.70
87.80
87.90
88.00
88.10
88.20
88.30
88.40
88.50
88.60
88.70
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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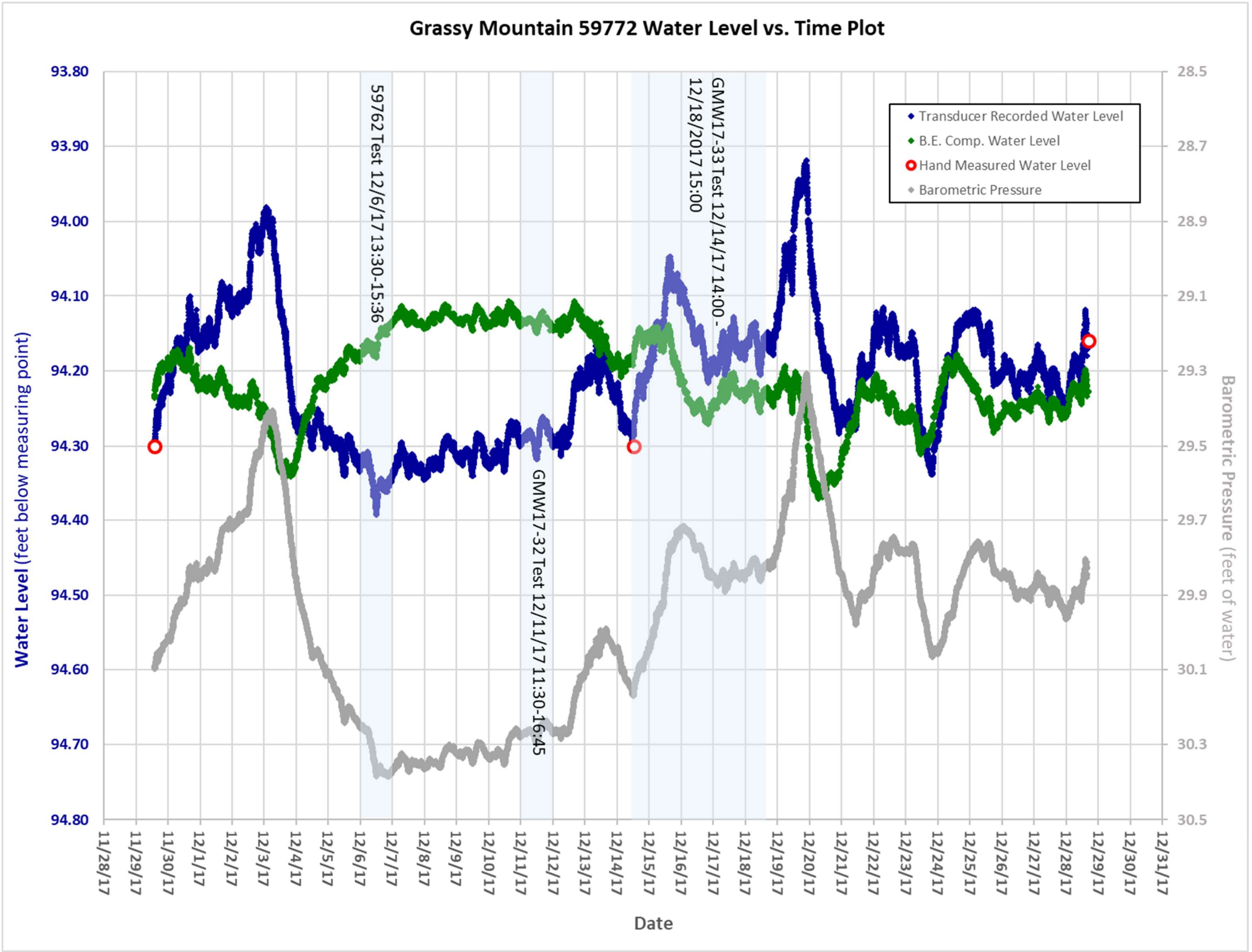
12/29/17
12/30/17
12/31/17


Grassy Mountain 59772 Water Level vs. Time Plot
Water Level (feet below measuring point)
Barometric Pressure (feet of water)
Date
Transducer Recorded Water Level
B.E. Comp. Water Level
Hand Measured Water Level
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
93.80
93.90
94.00
94.10
94.20
94.30
94.40
94.50
94.60
94.70
94.80
28.5
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
11/28/17
11/29/17
11/30/17
12/1/17
12/2/17
12/3/17
12/4/17
12/5/17
12/6/17
12/7/17
12/8/17
12/9/17
12/10/17
12/11/17
12/12/17
12/13/17
12/14/17
12/15/17
12/16/17
12/17/17
12/18/17
12/19/17
12/20/17
12/21/17
12/22/17
12/23/17
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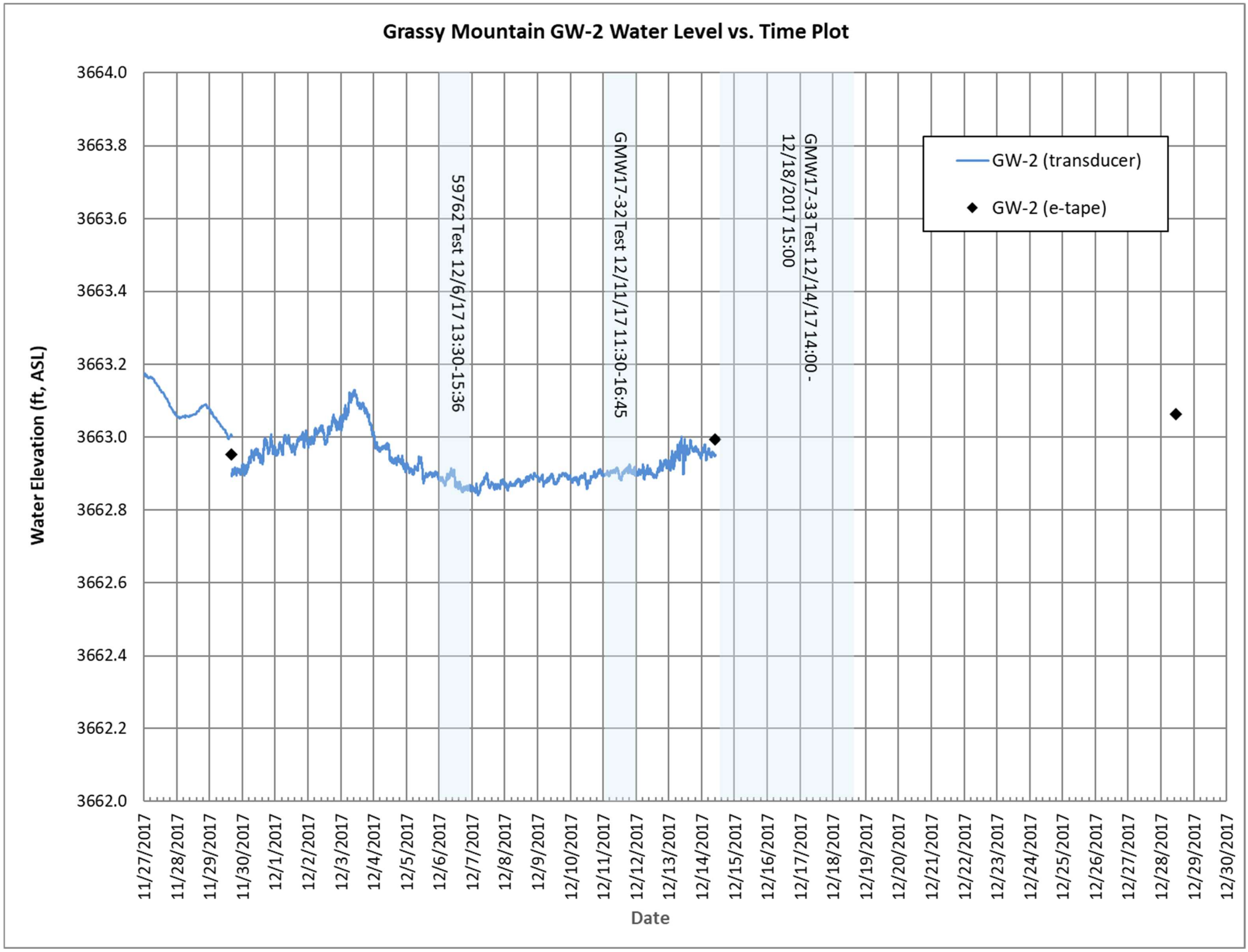
12/30/17
12/31/17


Grassy Mountain GW-2 Water Level vs. Time Plot
Water Elevation (ft, ASL)
3664.0
3663.8
3663.6
3663.4
3663.2
3663.0
3662.8
3662.6
3662.4
3662.2
3662.0
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
GW-2 (transducer)
GW-2 (e-tape)
11/27/2017
11/28/2017
11/29/2017
11/30/2017
12/1/2017
12/2/2017
12/3/2017
12/4/2017
12/5/2017
12/6/2017
12/7/2017
12/8/2017
12/9/2017
12/10/2017
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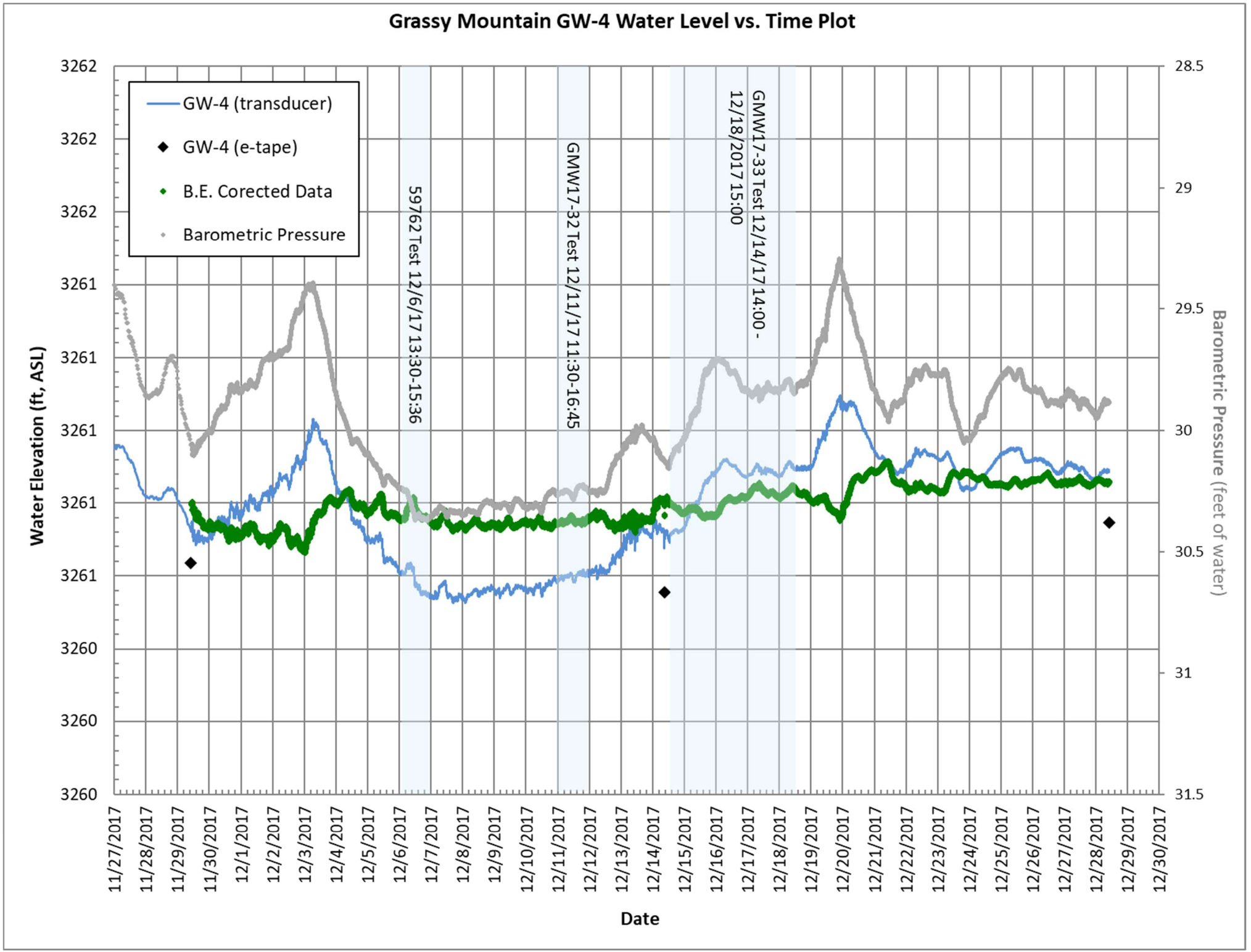
Grassy Mountain GW-4 Water Level vs. Time Plot
GW-4 (transducer)
GW-4 (e-tape)
B.E. Corected Data
Barometric Pressure
59762 Test 12/6/17 13:30-15:36
GMW17-32 Test 12/11/17 11:30-16:45
GMW17-33 Test 12/14/17 14:00 - 12/18/2017 15:00
Water Elevation (ft, ASL)
Barometric Pressure (feet of water)
Date
3262
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12/30/2017

Attachment G
Water Quality Results

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 15, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350

Boise, ID 83706

cc: Kurt Newbry

Bill to:
Jason Thompson
SPF Water Engineering
300 E Mallard Drive
Suite 350
Boise, ID 83706

Project ID: Calico Monitoring Well Samplin
ACZ Project ID: L41754

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 13, 2017. This project has been assigned to ACZ's project number, L41754. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L41754. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 14, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								12/20/17 17:18	wtc
Cyanide, WAD	SM4500-CN I- distillation								12/20/17 14:55	kea
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								12/19/17 12:07	kea
Total Hot Plate Digestion	M200.2 ICP-MS								12/22/17 13:17	mfm
Total Hot Plate Digestion	M200.2 ICP								12/21/17 16:52	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.25			mg/L	0.03	0.2	12/20/17 21:40	aeh
Aluminum, total	M200.7 ICP	1	4.78			mg/L	0.03	0.2	12/22/17 20:59	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.115			mg/L	0.0004	0.002	12/22/17 16:47	mfm
Antimony, total	M200.8 ICP-MS	1	0.0666		*	mg/L	0.0004	0.002	12/28/17 19:26	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0588			mg/L	0.0002	0.001	12/22/17 16:47	mfm
Arsenic, total	M200.8 ICP-MS	1	0.116			mg/L	0.0002	0.001	12/28/17 19:26	mfm
Barium, dissolved	M200.7 ICP	1	0.036			mg/L	0.003	0.02	12/20/17 21:40	aeh
Barium, total	M200.7 ICP	1	0.135			mg/L	0.003	0.02	12/22/17 20:59	aeh
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Beryllium, total	M200.8 ICP-MS	1	0.00056			mg/L	0.00005	0.0003	12/28/17 19:26	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/20/17 21:40	aeh
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	12/29/17 20:27	dcm
Boron, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	12/20/17 21:40	aeh
Boron, total	M200.7 ICP	1	0.26			mg/L	0.01	0.05	12/22/17 20:59	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Cadmium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Calcium, dissolved	M200.7 ICP	1	65.1			mg/L	0.1	0.5	12/20/17 21:40	aeh
Calcium, total	M200.7 ICP	1	91.0			mg/L	0.1	0.5	12/22/17 20:59	aeh
Chromium, dissolved	M200.8 ICP-MS	1	0.0008	B		mg/L	0.0005	0.002	12/22/17 16:47	mfm
Chromium, total	M200.8 ICP-MS	1	0.300			mg/L	0.0005	0.002	12/28/17 19:26	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	0.00033			mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Cobalt, total	M200.8 ICP-MS	1	0.00637			mg/L	0.00005	0.0003	12/28/17 19:26	mfm
Copper, dissolved	M200.8 ICP-MS	1	0.0026			mg/L	0.0004	0.002	12/22/17 16:47	mfm
Copper, total	M200.8 ICP-MS	1	0.0234			mg/L	0.0004	0.002	12/28/17 19:26	mfm
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 21:40	aeh
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/22/17 20:59	aeh
Iron, dissolved	M200.7 ICP	1	0.07			mg/L	0.02	0.05	12/20/17 21:40	aeh
Iron, total	M200.7 ICP	1	35.5			mg/L	0.02	0.05	12/22/17 20:59	aeh
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Lead, total	M200.8 ICP-MS	1	0.0204			mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Lithium, dissolved	M200.7 ICP	1	0.339			mg/L	0.008	0.04	12/20/17 21:40	aeh
Lithium, total	M200.7 ICP	1	0.350			mg/L	0.008	0.04	12/22/17 20:59	aeh
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	12/20/17 21:40	aeh
Magnesium, total	M200.7 ICP	1	1.1			mg/L	0.2	1	12/22/17 20:59	aeh
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	12/22/17 16:47	mfm
Manganese, total	M200.8 ICP-MS	1	0.206			mg/L	0.0004	0.002	12/28/17 19:26	mfm
Mercury, dissolved	M1631, Atomic Fluorescence	1	1.6			ng/L	0.2	0.5	12/21/17 11:46	mfm
Mercury, total	M1631, Atomic Fluorescence	5	84			ng/L	1	3	12/21/17 14:24	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0965			mg/L	0.0005	0.003	12/22/17 16:47	mfm
Molybdenum, total	M200.8 ICP-MS	1	0.108			mg/L	0.0005	0.003	12/28/17 19:26	mfm
Nickel, dissolved	M200.8 ICP-MS	1	0.001	B		mg/L	0.0006	0.003	12/22/17 16:47	mfm
Nickel, total	M200.8 ICP-MS	1	0.147			mg/L	0.0006	0.003	12/28/17 19:26	mfm
Potassium, dissolved	M200.7 ICP	1	18.6			mg/L	0.2	1	12/20/17 21:40	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Potassium, total	M200.7 ICP	1	21.3			mg/L	0.2	1	12/22/17 20:59	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/20/17 21:40	aeh
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	12/22/17 20:59	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	12/22/17 16:47	mfm
Selenium, total	M200.8 ICP-MS	1	0.0015			mg/L	0.0001	0.0003	12/28/17 19:26	mfm
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	12/22/17 16:47	mfm
Silver, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.00005	0.0003	01/03/18 19:09	mfm
Sodium, dissolved	M200.7 ICP	1	211			mg/L	0.2	1	12/20/17 21:40	aeh
Sodium, total	M200.7 ICP	1	211			mg/L	0.2	1	12/22/17 20:59	aeh
Strontium, dissolved	M200.7 ICP	1	1.35			mg/L	0.005	0.03	12/20/17 21:40	aeh
Strontium, total	M200.7 ICP	1	1.56			mg/L	0.005	0.03	12/22/17 20:59	aeh
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Thallium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Tin, dissolved	M200.8 ICP-MS	1	0.0014		*	mg/L	0.0001	0.0005	01/12/18 17:24	msh
Tin, total	M200.8 ICP-MS	1	0.0016		*	mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	12/20/17 21:40	aeh
Titanium, total	M200.7 ICP	1	0.106			mg/L	0.005	0.03	12/22/17 20:59	aeh
Uranium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	12/22/17 16:47	mfm
Uranium, total	M200.8 ICP-MS	1	0.0018			mg/L	0.0001	0.0005	12/28/17 19:26	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	0.0082			mg/L	0.0002	0.001	12/22/17 16:47	mfm
Vanadium, total	M200.8 ICP-MS	1	0.016			mg/L	0.0002	0.001	12/28/17 19:26	mfm
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	12/20/17 21:40	aeh
Zinc, total	M200.7 ICP	1	0.06			mg/L	0.01	0.05	12/22/17 20:59	aeh

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: GMW17-32

ACZ Sample ID: ***L41754-01***
Date Sampled: *12/11/17 16:32*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	12/16/17 0:00	emk
Carbonate as CaCO3		1	45.4			mg/L	2	20	12/16/17 0:00	emk
Hydroxide as CaCO3		1	82.7			mg/L	2	20	12/16/17 0:00	emk
Total Alkalinity		1	128			mg/L	2	20	12/16/17 0:00	emk
Chloride	M300.0 - Ion Chromatography	5	31.1			mg/L	2	10	12/28/17 19:43	las
Conductivity @25C	SM2510B	1	1530			umhos/cm	1	10	12/16/17 21:40	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/22/17 22:29	pjb
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	12/20/17 20:10	pjb
Fluoride	M300.0 - Ion Chromatography	5	1.12	B	*	mg/L	0.25	1.25	12/21/17 22:22	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		163			mg/L	0.2	5	01/15/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.68			mg/L	0.02	0.1	12/21/17 22:37	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	1.20		*	mg/L	0.05	0.2	12/21/17 16:39	krh
pH (lab)	SM4500H+ B									
pH		1	11.3	H		units	0.1	0.1	12/16/17 0:00	emk
pH measured at		1	21.2			C	0.1	0.1	12/16/17 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	0.23		*	mg/L	0.02	0.05	12/21/17 19:32	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	920			mg/L	50	100	12/14/17 14:13	mh
Residue, Non-Filterable (TSS) @105C	SM2540D	1	138		*	mg/L	5	20	12/15/17 16:28	mh
Sulfate	M300.0 - Ion Chromatography	5	381			mg/L	2	10	12/21/17 22:22	las

SPF Water Engineering
Project ID: Calico Monitoring Well Sam
Sample ID: TRIP BLANK

ACZ Sample ID: ***L41754-02***
Date Sampled: *12/11/17 00:00*
Date Received: *12/13/17*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	12/21/17 13:29	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L41754***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350PBW1	PBW	12/16/17 15:09				U	mg/L		-20	20			
WG438350LCSW3	LCSW	12/16/17 15:25	WC171214-1	820.0001		789	mg/L	96	90	110			
WG438350LCSW6	LCSW	12/16/17 18:06	WC171214-1	820.0001		793	mg/L	97	90	110			
WG438350PBW2	PBW	12/16/17 18:14				3	mg/L		-20	20			
WG438350LCSW9	LCSW	12/16/17 20:59	WC171214-1	820.0001		795	mg/L	97	90	110			
WG438350PBW3	PBW	12/16/17 21:08				3.8	mg/L		-20	20			
L41780-06DUP	DUP	12/16/17 22:34			259	273	mg/L				5	20	
WG438350LCSW12	LCSW	12/17/17 1:12	WC171214-1	820.0001		799	mg/L	97	90	110			
WG438350PBW4	PBW	12/17/17 1:21				3.4	mg/L		-20	20			
WG438350LCSW15	LCSW	12/17/17 5:02	WC171214-1	820.0001		809	mg/L	99	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.961	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.09	0.09			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.0019		.985	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.0019	U	1.016	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.0019	U	1.011	mg/L	101	85	115	0	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.906	mg/L	95	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.09	0.09			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.066	0.066			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.0019		.975	mg/L	97	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.0019	U	1.023	mg/L	102	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.0019	U	1.022	mg/L	102	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02		.01793	mg/L	90	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.01		.01023	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.01	.1153	.1249	mg/L	96	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.01	.1153	.1246	mg/L	93	70	130	0	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.02		.01885	mg/L	94	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.01		.01036	mg/L	104	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.01	.0666	.07316	mg/L	66	70	130			M3
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.01	.0666	.07396	mg/L	74	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04995	mg/L	100	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0006	0.0006			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.0496	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.0588	.1078	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.0588	.1088	mg/L	100	70	130	1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05068	mg/L	101	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0006	0.0006			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00044	0.00044			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04987	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1164	.1666	mg/L	100	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1164	.1628	mg/L	93	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.9678	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.009	0.009			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5015		.4904	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5015	.079	.5748	mg/L	99	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5015	.079	.572	mg/L	98	85	115	0	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9412	mg/L	97	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.009	0.009			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.0066	0.0066			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5015		.4877	mg/L	97	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5015	U	.4876	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5015	U	.4946	mg/L	99	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04788	mg/L	96	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05035		.04686	mg/L	93	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05035	U	.04903	mg/L	97	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05035	U	.04795	mg/L	95	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04915	mg/L	98	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05035		.04862	mg/L	97	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05035	.00056	.05077	mg/L	100	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05035	.00056	.05333	mg/L	105	70	130	5	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.994	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.12	0.12			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.9993		.973	mg/L	97	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.9993	U	.961	mg/L	96	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.9993	U	.997	mg/L	100	85	115	4	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439069													
WG439069ICV	ICV	12/29/17 20:03	II171101-5	2		1.935	mg/L	97	95	105			
WG439069ICB	ICB	12/29/17 20:09				U	mg/L		-0.12	0.12			
WG438764LRB	LRB	12/29/17 20:21				U	mg/L		-0.088	0.088			
WG438764LFB	LFB	12/29/17 20:24	II171220-5	.9993		.929	mg/L	93	85	115			
L41760-03LFM	LFM	12/29/17 20:39	II171220-5	.9993	U	.953	mg/L	95	70	130			
L41760-03LFMD	LFMD	12/29/17 20:42	II171220-5	.9993	U	.952	mg/L	95	70	130	0	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.007	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.03	0.03			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5005		.505	mg/L	101	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5005	.01	.517	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5005	.01	.505	mg/L	99	85	115	2	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.061	mg/L	103	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.03	0.03			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.022	0.022			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5005		.515	mg/L	103	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5005	U	.516	mg/L	103	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5005	U	.52	mg/L	104	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05115	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05052	mg/L	101	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	U	.05023	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	U	.05063	mg/L	101	70	130	1	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05153	mg/L	103	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04885	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.0001	.0495	mg/L	99	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.0001	.04998	mg/L	100	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		101.7	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	68.03333		68.25	mg/L	100	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	68.03333	25.8	93.26	mg/L	99	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	68.03333	25.8	93.31	mg/L	99	85	115	0	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		100.3	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	68.03333		68.16	mg/L	100	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	68.03333	U	68.59	mg/L	101	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	68.03333	U	68.92	mg/L	101	70	130	0	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438215													
WG438215ICV	ICV	12/13/17 22:30	WI171110-2	20.06		20.2	mg/L	101	90	110			
WG438215ICB	ICB	12/13/17 22:47				U	mg/L		-0.4	0.4			
WG438942													
WG438942LFB1	LFB	12/28/17 19:25	WI171110-4	30.03		29.8	mg/L	99	90	110			
L41754-01DUP	DUP	12/28/17 20:01			31.1	31.2	mg/L				0	20	
L41781-01AS	AS	12/28/17 20:37	WI171110-4	300.3	36.1	337	mg/L	100	90	110			
WG438942LFB2	LFB	12/29/17 4:05	WI171110-4	30.03		30.5	mg/L	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L41754***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05104	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0015	0.0015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05		.05075	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05	.0008	.04919	mg/L	97	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05	.0008	.04903	mg/L	96	70	130	0	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05035	mg/L	101	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0015	0.0015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.0011	0.0011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05		.04905	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05	.3004	.3471	mg/L	93	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05	.3004	.3475	mg/L	94	70	130	0	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.0537	mg/L	107	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05211	mg/L	104	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.00033	.04947	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.00033	.04967	mg/L	99	70	130	0	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05339	mg/L	107	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.05031	mg/L	101	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.00637	.05708	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.00637	.05826	mg/L	104	70	130	2	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW2	LCSW	12/16/17 15:14	PCN54306	1410		1440	umhos/cm	102	90	110			
WG438350LCSW5	LCSW	12/16/17 17:54	PCN54306	1410		1430	umhos/cm	101	90	110			
WG438350LCSW8	LCSW	12/16/17 20:48	PCN54306	1410		1430	umhos/cm	101	90	110			
L41780-06DUP	DUP	12/16/17 22:34			737	739	umhos/cm				0	20	
WG438350LCSW11	LCSW	12/17/17 1:01	PCN54306	1410		1420	umhos/cm	101	90	110			
WG438350LCSW14	LCSW	12/17/17 4:51	PCN54306	1410		1420	umhos/cm	101	90	110			

SPF Water Engineering

ACZ Project ID: ***L41754***

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05108	mg/L	102	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0491		.04937	mg/L	101	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0491	.0026	.04911	mg/L	95	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0491	.0026	.04922	mg/L	95	70	130	0	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05142	mg/L	103	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0491		.04994	mg/L	102	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0491	.0234	.0691	mg/L	93	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0491	.0234	.06877	mg/L	92	70	130	0	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438876													
WG438876ICV	ICV	12/22/17 21:42	WI171213-6	.3006		.3135	mg/L	104	90	110			
WG438876ICB	ICB	12/22/17 21:43				U	mg/L		-0.003	0.003			
WG438878													
WG438652LRB	LRB	12/22/17 22:18				U	mg/L		-0.003	0.003			
WG438652LFB	LFB	12/22/17 22:19	WI171220-3	.2		.19	mg/L	95	90	110			
L41728-01DUP	DUP	12/22/17 22:21			U	U	mg/L				0	20	RA
L41728-02LFM	LFM	12/22/17 22:23	WI171220-3	.2	U	.1823	mg/L	91	90	110			

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438690													
WG438690ICV	ICV	12/20/17 18:47	WI171213-6	.3006		.3173	mg/L	106	90	110			
WG438690ICB	ICB	12/20/17 18:48				U	mg/L		-0.003	0.003			
WG438693													
WG438647LRB	LRB	12/20/17 19:59				U	mg/L		-0.003	0.003			
WG438647LFB	LFB	12/20/17 20:00	WI171213-2	.2004		.2087	mg/L	104	90	110			
L41728-03LFM	LFM	12/20/17 20:04	WI171213-2	.2004	U	.1945	mg/L	97	90	110			
L41728-04DUP	DUP	12/20/17 20:05			U	U	mg/L				0	20	RA

SPF Water Engineering

ACZ Project ID: ***L41754***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	3.996		4.06	mg/L	102	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.05	0.05			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	1.5		1.54	mg/L	103	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	1.5		1.5	mg/L	100	90	110			
L41781-01AS	AS	12/21/17 4:46	WI171110-4	15	22.8	37.8	mg/L	100	90	110			
L41754-01DUP	DUP	12/21/17 22:40			1.12	1.13	mg/L				1	20	RA

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.02	mg/L	101	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1		.97	mg/L	97	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1	U	1.01	mg/L	101	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1	U	1.01	mg/L	101	85	115	0	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.02	mg/L	101	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1		.99	mg/L	99	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1	U	.97	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1	U	1.01	mg/L	101	70	130	4	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.964	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.06	0.06			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.0011		1	mg/L	100	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.0011	2.5	3.367	mg/L	87	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.0011	2.5	3.393	mg/L	89	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.922	mg/L	96	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.06	0.06			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.044	0.044			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.0011		.991	mg/L	99	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.0011	U	.995	mg/L	99	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.0011	U	1.005	mg/L	100	70	130	1	20	

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ACZ Project ID: ***L41754***

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05209	mg/L	104	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0496		.04977	mg/L	100	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0496	U	.05095	mg/L	103	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0496	U	.05168	mg/L	104	70	130	1	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05253	mg/L	105	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0496		.04936	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0496	.0204	.07038	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0496	.0204	.07124	mg/L	103	70	130	1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		1.9652	mg/L	98	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.024	0.024			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.001		.9579	mg/L	96	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.001	U	.9733	mg/L	97	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.001	U	.9671	mg/L	97	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9365	mg/L	97	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.024	0.024			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.0176	0.0176			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.001		.9591	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.001	U	.9704	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.001	U	.9843	mg/L	98	70	130	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		101.55	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	50.05743		46.71	mg/L	93	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	50.05743	14.6	61.02	mg/L	93	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	50.05743	14.6	61.08	mg/L	93	85	115	0	20	

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ACZ Project ID: ***L41754***

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		99.92	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	50.05743		46.51	mg/L	93	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	50.05743	U	46.7	mg/L	93	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	50.05743	U	47.14	mg/L	94	70	130	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05228	mg/L	105	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0012	0.0012			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05209	mg/L	104	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	U	.05046	mg/L	101	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	U	.05016	mg/L	100	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05212	mg/L	104	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0012	0.0012			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00088	0.00088			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.0502	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.2062	.2595	mg/L	106	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.2062	.2617	mg/L	111	70	130	1	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438721													
WG438721CCV	CCV	12/21/17 11:12	HG171221-4	10		9.3	ng/L	93	76.5	123.4			
WG438721CCB	CCB	12/21/17 11:17				U	ng/L		-0.5	0.5			
WG438721PQV	PQV	12/21/17 11:21	HG171221-6	.5		.45	ng/L	90	70	130			
WG438721LFB	LFB	12/21/17 11:26	HG171221-5	2		2.07	ng/L	104	71	125			
L41683-01MS	MS	12/21/17 11:36	HG171221-5	2	U	2.02	ng/L	101	71	125			
L41683-01MSD	MSD	12/21/17 11:41	HG171221-5	2	U	2.1	ng/L	105	71	125	4	24	
WG438721CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438721CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			

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ACZ Project ID: ***L41754***

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG431734													
WG431734ICV	ICV	09/21/17 11:47	HG170915-7	10		10.9	ng/L	109	79	121			
WG431734ICB	ICB	09/21/17 11:52				U	ng/L		-0.5	0.5			
WG438726													
WG438726CCV1	CCV	12/21/17 11:55	HG171221-4	10		10.5	ng/L	105	76.5	123.4			
WG438726CCB1	CCB	12/21/17 12:00				U	ng/L		-0.5	0.5			
WG438726PQV	PQV	12/21/17 12:21	HG171221-6	.5		.5	ng/L	100	70	130			
WG438726LFB	LFB	12/21/17 12:26	HG171221-5	2		2.02	ng/L	101	71	125			
L41704-02MS	MS	12/21/17 12:45	HG171221-5	2	.3	2.21	ng/L	96	71	125			
L41704-02MSD	MSD	12/21/17 12:50	HG171221-5	2	.3	2.62	ng/L	116	71	125	17	24	
WG438726CCV2	CCV	12/21/17 13:14	HG171221-4	10		11.3	ng/L	113	76.5	123.4			
WG438726CCB2	CCB	12/21/17 13:19				U	ng/L		-0.5	0.5			
WG438726CCV3	CCV	12/21/17 14:12	HG171221-4	10		10.8	ng/L	108	76.5	123.4			
WG438726CCB3	CCB	12/21/17 14:17				U	ng/L		-0.5	0.5			
WG438726CCV4	CCV	12/21/17 14:29	HG171221-4	10		10.9	ng/L	109	76.5	123.4			
WG438726CCB4	CCB	12/21/17 14:34				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02006		.01953	mg/L	97	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0015	0.0015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.04972	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.0965	.1465	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.0965	.1487	mg/L	104	70	130	1	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.02006		.01899	mg/L	95	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0015	0.0015			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.0011	0.0011			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04779	mg/L	95	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1081	.1599	mg/L	103	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1081	.1638	mg/L	111	70	130	2	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05209	mg/L	104	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0018	0.0018			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.04966	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	.001	.0471	mg/L	92	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	.001	.04811	mg/L	94	70	130	2	20	

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ACZ Project ID: ***L41754***

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05176	mg/L	104	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0018	0.0018			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00132	0.00132			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.04901	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.1472	.1924	mg/L	90	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.1472	.1907	mg/L	87	70	130	1	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438798													
WG438798ICV	ICV	12/21/17 20:15	WI171215-1	2.416		2.336	mg/L	97	90	110			
WG438798ICB	ICB	12/21/17 20:16				U	mg/L		-0.02	0.02			
WG438802													
WG438802LFB	LFB	12/21/17 22:34	WI170705-5	2		1.977	mg/L	99	90	110			
L41704-02AS	AS	12/21/17 22:36	WI170705-5	2	.14	2.199	mg/L	103	90	110			
L41754-01DUP	DUP	12/21/17 22:39			.68	.678	mg/L				0	20	

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438757													
WG438757ICV	ICV	12/21/17 14:35	WI171221-2	11.988		12.351	mg/L	103	90	110			
WG438757ICB	ICB	12/21/17 14:36				U	mg/L		-0.05	0.05			
WG438769													
WG438769LFB1	LFB	12/21/17 15:58	WI171219-5	10		10.687	mg/L	107	90	110			
L41728-03AS	AS	12/21/17 16:22	WI171219-5	10	.23	10.522	mg/L	103	90	110			
L41728-04DUP	DUP	12/21/17 16:25			.25	.252	mg/L				1	20	RA
WG438769LFB2	LFB	12/21/17 16:41	WI171219-5	10		10.447	mg/L	104	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438350													
WG438350LCSW1	LCSW	12/16/17 15:12	PCN52664	6		6	units	100	5.9	6.1			
WG438350LCSW4	LCSW	12/16/17 17:52	PCN52664	6		6	units	100	5.9	6.1			
WG438350LCSW7	LCSW	12/16/17 20:46	PCN52664	6		6.1	units	102	5.9	6.1			
L41780-06DUP	DUP	12/16/17 22:34			8.6	8.6	units				0	20	
WG438350LCSW10	LCSW	12/17/17 0:59	PCN52664	6		6.1	units	102	5.9	6.1			
WG438350LCSW13	LCSW	12/17/17 4:49	PCN52664	6		6.1	units	102	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L41754***

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438795													
WG438795ICV	ICV	12/21/17 18:30	WI171105-7	.65228		.675	mg/L	103	90	110			
WG438795ICB	ICB	12/21/17 18:32				U	mg/L		-0.02	0.02			
WG438796													
WG438495LRB	LRB	12/21/17 19:16				U	mg/L		-0.02	0.02			
WG438495LFB	LFB	12/21/17 19:17	WI171213-4	.5		.493	mg/L	99	90	110			
L41742-01LFM	LFM	12/21/17 19:23	WI171213-4	.5	U	.5	mg/L	100	90	110			
L41742-02DUP	DUP	12/21/17 19:25			.03	.024	mg/L				22	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	20		20.41	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	100.0094		98.28	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	100.0094	3.8	103.9	mg/L	100	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	100.0094	3.8	103.2	mg/L	99	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	20		20.08	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	100.0094		97.8	mg/L	98	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	100.0094	U	98.13	mg/L	98	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	100.0094	U	98.76	mg/L	99	70	130	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438180													
WG438180PBW	PBW	12/14/17 13:30				10	mg/L		-20	20			
WG438180LCSW	LCSW	12/14/17 13:33	PCN54731	260		262	mg/L	101	80	120			
L41754-01DUP	DUP	12/14/17 14:17			920	880	mg/L				4	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438313													
WG438313PBW	PBW	12/15/17 15:40				U	mg/L		-15	15			
WG438313LCSW	LCSW	12/15/17 15:43	PCN54731	160		158	mg/L	99	80	120			
L41794-07DUP	DUP	12/15/17 17:00			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L41754***

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.04	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.3	0.3			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.9868		.98	mg/L	99	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.9868	U	1.01	mg/L	102	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.9868	U	1.01	mg/L	102	85	115	0	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.99	mg/L	100	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.3	0.3			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.22	0.22			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.9868		1.01	mg/L	102	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.9868	U	1.01	mg/L	102	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.9868	U	1.02	mg/L	103	70	130	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05167	mg/L	103	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.04954	mg/L	99	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.0015	.05079	mg/L	98	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.0015	.05119	mg/L	99	70	130	1	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04603	mg/L	92	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04865	mg/L	97	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.0015	.04962	mg/L	96	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.0015	.0482	mg/L	93	70	130	3	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.02004		.02027	mg/L	101	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.00015	0.00015			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.01002		.01057	mg/L	105	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.01002	U	.008148	mg/L	81	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.01002	U	.008441	mg/L	84	70	130	4	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439293													
WG439293ICV	ICV	01/03/18 19:01	MS171115-2	.02004		.02022	mg/L	101	90	110			
WG439293ICB	ICB	01/03/18 19:03				U	mg/L		-0.00015	0.00015			
WG438807LRB	LRB	01/03/18 19:05				U	mg/L		-0.00011	0.00011			
WG438807LFB	LFB	01/03/18 19:07	MS171129-3	.01002		.00917	mg/L	92	85	115			
L41754-01LFM	LFM	01/03/18 19:11	MS171129-3	.01002	.0002	.009022	mg/L	88	70	130			
L41754-01LFMD	LFMD	01/03/18 19:13	MS171129-3	.01002	.0002	.009098	mg/L	89	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	100		102.28	mg/L	102	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.6	0.6			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	100.0062		99.42	mg/L	99	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	100.0062	12.9	113	mg/L	100	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	100.0062	12.9	112.7	mg/L	100	85	115	0	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	100		97.99	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.6	0.6			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.44	0.44			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	100.0062		95.89	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	100.0062	U	96.82	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	100.0062	U	97.18	mg/L	97	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.019	mg/L	101	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.015	0.015			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.5015		.4917	mg/L	98	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.5015	.309	.796	mg/L	97	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.5015	.309	.7958	mg/L	97	85	115	0	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.9672	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.015	0.015			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.011	0.011			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.5015		.4823	mg/L	96	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.5015	U	.4877	mg/L	97	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.5015	U	.49	mg/L	98	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG435992													
WG435992ICV	ICV	11/13/17 19:39	WI171110-2	50		50.3	mg/L	101	90	110			
WG435992ICB	ICB	11/13/17 19:57				U	mg/L		-0.4	0.4			
WG438601													
WG438601LFB1	LFB	12/20/17 18:19	WI171110-4	30.03		30.5	mg/L	102	90	110			
WG438601LFB2	LFB	12/21/17 2:58	WI171110-4	30.03		30	mg/L	100	90	110			
L41781-01AS	AS	12/21/17 4:46	WI171110-4	300.3	U	296	mg/L	99	90	110			
L41754-01DUP	DUP	12/21/17 22:40			381	383	mg/L				1	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05359	mg/L	107	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.0501		.05091	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.0501	U	.0518	mg/L	103	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.0501	U	.05277	mg/L	105	70	130	2	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.05387	mg/L	108	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.0501		.0501	mg/L	100	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.0501	.0001	.05048	mg/L	101	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.0501	.0001	.05125	mg/L	102	70	130	2	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439841													
WG439841ICV	ICV	01/12/18 17:10	MS171115-2	.04945		.0512	mg/L	104	90	110			
WG439841ICB	ICB	01/12/18 17:12				.00011	mg/L		-0.0003	0.0003			
WG439841LFB	LFB	01/12/18 17:14	MS171129-3	.04945		.05333	mg/L	108	85	115			
L41683-01AS	AS	01/12/18 17:21	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130			
L41683-01ASD	ASD	01/12/18 17:23	MS171129-3	.04945	.0001	.05224	mg/L	105	70	130	0	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.04945		.04523	mg/L	91	90	110			
WG439029ICB	ICB	12/28/17 18:05				.00016	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.04945		.04747	mg/L	96	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.04945	.0016	.02729	mg/L	52	70	130			M2
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.04945	.0016	.03147	mg/L	60	70	130	14	20	M2

SPF Water Engineering

ACZ Project ID: ***L41754***

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.05	mg/L	103	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.015	0.015			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	1.003		1.013	mg/L	101	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	1.003	U	1.026	mg/L	102	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	1.003	U	1.026	mg/L	102	85	115	0	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		2.0105	mg/L	101	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.015	0.015			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.011	0.011			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	1.003		1.01	mg/L	101	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	1.003	U	1.009	mg/L	101	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	1.003	U	1.028	mg/L	102	70	130	2	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.05174	mg/L	103	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0003	0.0003			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05		.05102	mg/L	102	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05	U	.05419	mg/L	108	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05	U	.05447	mg/L	109	70	130	1	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.0524	mg/L	105	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0003	0.0003			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00022	0.00022			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05		.05161	mg/L	103	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05	.0018	.05506	mg/L	107	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05	.0018	.05593	mg/L	108	70	130	2	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438849													
WG438849ICV	ICV	12/22/17 15:23	MS171115-2	.05		.04965	mg/L	99	90	110			
WG438849ICB	ICB	12/22/17 15:25				U	mg/L		-0.0006	0.0006			
WG438849LFB	LFB	12/22/17 15:29	MS171129-3	.05005		.05007	mg/L	100	85	115			
L41754-01AS	AS	12/22/17 16:50	MS171129-3	.05005	.0082	.05803	mg/L	100	70	130			
L41754-01ASD	ASD	12/22/17 16:53	MS171129-3	.05005	.0082	.05892	mg/L	101	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L41754***

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG439029													
WG439029ICV	ICV	12/28/17 18:02	MS171115-2	.05		.04962	mg/L	99	90	110			
WG439029ICB	ICB	12/28/17 18:05				U	mg/L		-0.0006	0.0006			
WG438807LRB	LRB	12/28/17 18:08				U	mg/L		-0.00044	0.00044			
WG438807LFB	LFB	12/28/17 18:11	MS171129-3	.05005		.04923	mg/L	98	85	115			
L41754-01LFM	LFM	12/28/17 19:29	MS171129-3	.05005	.016	.06485	mg/L	98	70	130			
L41754-01LFMD	LFMD	12/28/17 19:32	MS171129-3	.05005	.016	.06549	mg/L	99	70	130	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438679													
WG438679ICV	ICV	12/20/17 19:49	II171220-1	2		2.002	mg/L	100	95	105			
WG438679ICB	ICB	12/20/17 19:56				U	mg/L		-0.03	0.03			
WG438679LFB	LFB	12/20/17 20:09	II171220-5	.4942		.511	mg/L	103	85	115			
L41722-21AS	AS	12/20/17 21:04	II171220-5	.4942	U	.527	mg/L	107	85	115			
L41722-21ASD	ASD	12/20/17 21:07	II171220-5	.4942	U	.522	mg/L	106	85	115	1	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG438846													
WG438846ICV	ICV	12/22/17 20:26	II171206-1	2		1.962	mg/L	98	95	105			
WG438846ICB	ICB	12/22/17 20:32				U	mg/L		-0.03	0.03			
WG438764LRB	LRB	12/22/17 20:46				U	mg/L		-0.022	0.022			
WG438764LFB	LFB	12/22/17 20:49	II171220-5	.4942		.51	mg/L	103	85	115			
L41760-03LFM	LFM	12/22/17 21:12	II171220-5	.4942	U	.513	mg/L	104	70	130			
L41760-03LFMD	LFMD	12/22/17 21:15	II171220-5	.4942	U	.516	mg/L	104	70	130	1	20	

SPF Water Engineering ACZ Project ID: ***L41754***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L41754-01	WG439029	Antimony, total	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG438849	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG438878	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438693	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438601	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438769	Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438796	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG438313	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG439029	Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID: L41754
Date Received: 12/13/2017 11:59
Received By:
Date Printed: 12/14/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA27494	3.9	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering
Calico Monitoring Well Sampling

ACZ Project ID:	L41754
Date Received:	12/13/2017 11:59
Received By:	
Date Printed:	12/14/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L41754

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Jason Thompson	Address: 300 E. Mallard Dr. Ste 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: jthompson@SPFwater.com	Telephone: (208) 383-4140

Copy of Report to:

Name: Kurt Newbry	E-mail: Knewbry@SPFwater.com
Company: SPF Water Engineering	Telephone: (208) 520-9173

Invoice to:

Name: Same	Address: Same
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [✓]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** **State** ID **Zip code** 83706 **Time Zone** MTN

***Sampler's Signature:** _____

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: SPF - 2017-GW

PO#: Calico Monitoring Well Sampling

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	* SPF-2017-GW							
GMW17-32	12/11/17 1632	GW	9	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* See attached for Parameters to be analyzed

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kurt Newbry	12/12/17 12:30	BCR	12/13/17 1159

L41754 Chain of Custody

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

11/10/2017

,

Quote Number: SPF-2017-GW

Matrix: Ground Water Quarterly Analysis of Groundwater and Springs

Parameter	Method	Detection Limit	Cost/Sample
Inorganic Prep			
Cyanide, total	M335.4 - Manual Distillation		$0.00
Cyanide, WAD	SM4500-CN I- distillation		$0.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digesti		$0.00
Total Hot Plate Digestion	M200.2 ICP		$12.00
Total Hot Plate Digestion	M200.2 ICP-MS		$12.00
Metals Analysis			
Aluminum, dissolved	M200.7 ICP	0.03 mg/L	$0.00
Aluminum, total	M200.7 ICP	0.03 mg/L	$0.00
Antimony, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Antimony, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Arsenic, dissolved	M200.8 ICP-MS	0.0002 mg/L	$0.00
Arsenic, total	M200.8 ICP-MS	0.0002 mg/L	$0.00
Barium, dissolved	M200.7 ICP	0.003 mg/L	$0.00
Barium, total	M200.7 ICP	0.003 mg/L	$0.00
Beryllium, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Beryllium, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Bismuth, dissolved	M200.7 ICP	0.04 mg/L	$0.00
Bismuth, total	M200.7 ICP	0.04 mg/L	$0.00
Boron, dissolved	M200.7 ICP	0.01 mg/L	$0.00
Boron, total	M200.7 ICP	0.01 mg/L	$0.00
Cadmium, dissolved	M200.8 ICP-MS	0.0001 mg/L	$0.00
Cadmium, total	M200.8 ICP-MS	0.0001 mg/L	$0.00
Calcium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Calcium, total	M200.7 ICP	0.1 mg/L	$0.00
Chromium, dissolved	M200.8 ICP-MS	0.0005 mg/L	$0.00
Chromium, total	M200.8 ICP-MS	0.0005 mg/L	$0.00
Cobalt, dissolved	M200.8 ICP-MS	0.00005 mg/L	$0.00
Cobalt, total	M200.8 ICP-MS	0.00005 mg/L	$0.00
Copper, dissolved	M200.8 ICP-MS	0.0004 mg/L	$0.00
Copper, total	M200.8 ICP-MS	0.0004 mg/L	$0.00
Gallium, dissolved	M200.7 ICP	0.1 mg/L	$0.00
Gallium, total	M200.7 ICP	0.1 mg/L	$0.00
Iron, dissolved	M200.7 ICP	0.02 mg/L	$0.00
Iron, total	M200.7 ICP	0.02 mg/L	$0.00

REPAD.09.06.05.01 S/ mj D/ ## P/

Setup charge for ICP, total			$90.00
Setup charge for ICPMS, dissolved			$90.00
Setup charge for ICPMS, total			$90.00
Wet Chemistry			
Alkalinity as CaCO3	SM2320B - Titration	2 mg/L	$12.00
Chloride	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
Conductivity @25C	SM2510B	1 umhos/cm	$8.00
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.003 mg/L	$37.00
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distil	0.003 mg/L	$37.00
Fluoride	M300.0 - Ion Chromatography	0.05 mg/L	$13.00
Hardness as CaCO3 (dissolved)	SM2340B - Calculation	Calculation	$0.00
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02 mg/L	$11.00
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusi	0.05 mg/L	$11.00
pH (lab)	SM4500H+ B	0.1 C	$8.00
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02 mg/L	$23.00
Residue, Filterable (TDS) @180C	SM2540C	10 mg/L	$14.00
Residue, Non-Filterable (TSS) @105C	SM2540D	5 mg/L	$12.00
Sulfate	M300.0 - Ion Chromatography	0.4 mg/L	$13.00
		Cost/Sample:	**$730.00**

ACZ assigns a Project Manager to all of our clients. Your Project Manager is Max Janicek and he will serve as your main point of contact for all bottle orders, report statuses, questions on your data and changes to your account. Max can be reached at maxj@acz.com or 970-879-6590 ext 128.

Attachment H
Water Quality Re-Sampling Results

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 13, 2018

Report to:
Jason Thompson
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

cc: Kurt Newbry

Bill to:
Crystal Jensen
SPF Water Engineering
300 E. Mallard Drive, Suite 350
Boise, ID 83706

Project ID:
ACZ Project ID: L45855

Jason Thompson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 26, 2018. This project has been assigned to ACZ's project number, L45855. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L45855. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 12, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

SPF Water Engineering

August 13, 2018

Project ID:
ACZ Project ID: L45855

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 groundwater samples from SPF Water Engineering on July 26, 2018. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L45855. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further explanation not provided by the Extended Qualifier Report:

1. Tin, dissolved (B1) - Dissolved Tin was flagged with a "B1" in the QC Summary since tin was detected in the ICB over the limit at 0.00046 mg/L. No further action was taken since dissolved tin was not detected in the sample.

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								08/10/18 10:40	ttg
Cyanide, WAD	SM4500-CN I- distillation								07/27/18 13:52	ttg/wtc
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								07/31/18 9:03	ttg
Total Hot Plate Digestion	M200.2 ICP-MS								08/02/18 15:14	rap
Total Hot Plate Digestion	M200.2 ICP								08/01/18 12:53	aeh

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.04	B		mg/L	0.03	0.2	07/30/18 14:31	dcm
Aluminum, total	M200.7 ICP	1	0.09	B		mg/L	0.03	0.2	08/02/18 21:42	aeh
Antimony, dissolved	M200.8 ICP-MS	1	0.0939			mg/L	0.0004	0.002	08/09/18 0:31	msh
Antimony, total	M200.8 ICP-MS	1	0.0876			mg/L	0.0004	0.002	08/08/18 7:47	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0871			mg/L	0.0002	0.001	08/09/18 0:31	msh
Arsenic, total	M200.8 ICP-MS	1	0.0881			mg/L	0.0002	0.001	08/08/18 7:47	msh
Barium, dissolved	M200.7 ICP	1	0.035			mg/L	0.003	0.02	07/30/18 14:31	dcm
Barium, total	M200.7 ICP	1	0.038			mg/L	0.003	0.02	08/02/18 21:42	aeh
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Beryllium, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/30/18 14:31	dcm
Bismuth, total	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/02/18 21:42	aeh
Boron, dissolved	M200.7 ICP	1	0.24			mg/L	0.01	0.05	07/30/18 14:31	dcm
Boron, total	M200.7 ICP	1	0.25			mg/L	0.01	0.05	08/02/18 21:42	aeh
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Cadmium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Calcium, dissolved	M200.7 ICP	1	27.8			mg/L	0.1	0.5	07/30/18 14:31	dcm
Calcium, total	M200.7 ICP	1	29.2			mg/L	0.1	0.5	08/02/18 21:42	aeh
Chromium, dissolved	M200.8 ICP-MS	1	0.0006	B		mg/L	0.0005	0.002	08/09/18 0:31	msh
Chromium, total	M200.8 ICP-MS	1	0.0042			mg/L	0.0005	0.002	08/08/18 7:47	msh
Cobalt, dissolved	M200.8 ICP-MS	1	0.00006	B		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Cobalt, total	M200.8 ICP-MS	1	0.00021	B		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Copper, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/09/18 0:31	msh
Copper, total	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/08/18 7:47	msh
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/30/18 14:31	dcm
Gallium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/02/18 21:42	aeh
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	07/30/18 14:31	dcm
Iron, total	M200.7 ICP	1	0.34		*	mg/L	0.02	0.05	08/03/18 12:21	aeh
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Lead, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Lithium, dissolved	M200.7 ICP	1	0.392			mg/L	0.008	0.04	07/30/18 14:31	dcm
Lithium, total	M200.7 ICP	1	0.384			mg/L	0.008	0.04	08/02/18 21:42	aeh
Magnesium, dissolved	M200.7 ICP	1	1.5			mg/L	0.2	1	07/30/18 14:31	dcm
Magnesium, total	M200.7 ICP	1	1.5			mg/L	0.2	1	08/02/18 21:42	aeh
Manganese, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0004	0.002	08/09/18 0:31	msh
Manganese, total	M200.8 ICP-MS	1	0.006			mg/L	0.0004	0.002	08/08/18 7:47	msh
Mercury, dissolved	M1631, Atomic Fluorescence	1	0.8			ng/L	0.2	0.5	08/10/18 9:34	mfm
Mercury, total	M1631, Atomic Fluorescence	1	1.7			ng/L	0.2	0.5	08/06/18 11:47	mfm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0287			mg/L	0.0005	0.003	08/09/18 0:31	msh
Molybdenum, total	M200.8 ICP-MS	1	0.0322			mg/L	0.0005	0.003	08/08/18 7:47	msh
Nickel, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0006	0.003	08/09/18 0:31	msh
Nickel, total	M200.8 ICP-MS	1	0.0021	B		mg/L	0.0006	0.003	08/08/18 7:47	msh
Potassium, dissolved	M200.7 ICP	1	13.8			mg/L	0.2	1	07/30/18 14:31	dcm

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Potassium, total	M200.7 ICP	1	14.1			mg/L	0.2	1	08/02/18 21:42	aeh
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/30/18 14:31	dcm
Scandium, total	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/02/18 21:42	aeh
Selenium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0003	08/09/18 0:31	msh
Selenium, total	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0003	08/08/18 7:47	msh
Silver, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/09/18 0:31	msh
Silver, total	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/08/18 7:47	msh
Sodium, dissolved	M200.7 ICP	1	197			mg/L	0.2	1	07/30/18 14:31	dcm
Sodium, total	M200.7 ICP	1	203			mg/L	0.2	1	08/02/18 21:42	aeh
Strontium, dissolved	M200.7 ICP	1	1.03			mg/L	0.005	0.03	07/30/18 14:31	dcm
Strontium, total	M200.7 ICP	1	1.02			mg/L	0.005	0.03	08/02/18 21:42	aeh
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Thallium, total	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Tin, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/09/18 0:31	msh
Tin, total	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/08/18 7:47	msh
Titanium, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	07/31/18 14:11	dcm
Titanium, total	M200.7 ICP	1		U		mg/L	0.005	0.03	08/02/18 21:42	aeh
Uranium, dissolved	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/09/18 0:31	msh
Uranium, total	M200.8 ICP-MS	1	0.0001	B		mg/L	0.0001	0.0005	08/08/18 7:47	msh
Vanadium, dissolved	M200.8 ICP-MS	1	0.002			mg/L	0.0002	0.001	08/09/18 0:31	msh
Vanadium, total	M200.8 ICP-MS	1	0.0024			mg/L	0.0002	0.001	08/08/18 7:47	msh
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	07/30/18 14:31	dcm
Zinc, total	M200.7 ICP	1		U		mg/L	0.01	0.05	08/02/18 21:42	aeh

SPF Water Engineering
Project ID:
Sample ID: GMW17-32

ACZ Sample ID: ***L45855-01***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	07/31/18 0:00	emk
Carbonate as CaCO3		1	36.0			mg/L	2	20	07/31/18 0:00	emk
Hydroxide as CaCO3		1	13.7	B		mg/L	2	20	07/31/18 0:00	emk
Total Alkalinity		1	49.7			mg/L	2	20	07/31/18 0:00	emk
Chloride	M300.0 - Ion Chromatography	5	33.2		*	mg/L	2	10	08/07/18 5:51	las
Conductivity @25C	SM2510B	1	1210			umhos/cm	1	10	08/02/18 18:20	emk
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5		UH	*	mg/L	0.003	0.01	08/10/18 15:06	wtc
Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	0.5		U	*	mg/L	0.003	0.01	07/28/18 15:31	pjb
Fluoride	M300.0 - Ion Chromatography	5	1.69		*	mg/L	0.25	1.25	08/07/18 5:51	las
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		76			mg/L	0.2	5	08/13/18 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.06	B	*	mg/L	0.02	0.1	08/04/18 0:27	pjb
Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	1	0.53		*	mg/L	0.05	0.2	08/06/18 15:04	las
pH (lab)	SM4500H+ B									
pH		1	10.3	H		units	0.1	0.1	07/31/18 0:00	emk
pH measured at		1	19.8			C	0.1	0.1	07/31/18 0:00	emk
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1		U	*	mg/L	0.02	0.05	07/31/18 22:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	2	768			mg/L	20	40	07/26/18 16:14	nmc
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5.0	B	*	mg/L	5	20	07/27/18 14:39	nmc
Sulfate	M300.0 - Ion Chromatography	5	417			mg/L	2	10	08/07/18 5:51	las

SPF Water Engineering
Project ID:
Sample ID: TRIP BLANK

ACZ Sample ID: ***L45855-02***
Date Sampled: *07/25/18 11:36*
Date Received: *07/26/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Mercury, dissolved	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/10/18 9:48	mfm
Mercury, total	M1631, Atomic Fluorescence	1		U		ng/L	0.2	0.5	08/06/18 11:52	mfm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452883													
WG452883PBW1	PBW	07/31/18 13:50				3.4	mg/L		-20	20			
WG452883LCSW3	LCSW	07/31/18 14:10	WC180725-8	820.0001		831	mg/L	101	90	110			
L45855-01DUP	DUP	07/31/18 15:58			49.7	54.8	mg/L				10	20	
WG452883LCSW6	LCSW	07/31/18 18:05	WC180725-8	820.0001		836	mg/L	102	90	110			
WG452883PBW2	PBW	07/31/18 18:10				2.2	mg/L		-20	20			
WG452883LCSW9	LCSW	07/31/18 21:41	WC180725-8	820.0001		812	mg/L	99	90	110			
WG452883PBW3	PBW	07/31/18 21:46				2.3	mg/L		-20	20			
WG452883LCSW12	LCSW	08/01/18 0:57	WC180725-8	820.0001		816	mg/L	100	90	110			
WG452883PBW4	PBW	08/01/18 1:02				2.5	mg/L		-20	20			
WG452883LCSW15	LCSW	08/01/18 3:44	WC180725-8	820.0001		824	mg/L	100	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.957	mg/L	98	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.09	0.09			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.0019		1.065	mg/L	106	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.0019	.04	1.105	mg/L	106	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.0019	.04	1.09	mg/L	105	85	115	1	20	

Aluminum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.902	mg/L	95	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.09	0.09			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.066	0.066			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1.0019		1.042	mg/L	104	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1.0019	14.7	15.61	mg/L	91	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1.0019	14.7	15.63	mg/L	93	70	130	0	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02		.02061	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.01		.00954	mg/L	95	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.01	.0004	.00911	mg/L	87	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.01	.0004	.00951	mg/L	91	70	130	4	20	

Antimony, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02		.02011	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.01		.01032	mg/L	103	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.01	.0008	.0101	mg/L	93	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.01	.0008	.00999	mg/L	92	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04809	mg/L	96	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00044	0.00044			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04678	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	.0011	.04904	mg/L	96	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	.0011	.04877	mg/L	95	70	130	1	20	

Arsenic, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04752	mg/L	95	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0006	0.0006			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00044	0.00044			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04631	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	.0015	.04958	mg/L	96	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	.0015	.05041	mg/L	98	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.002	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.009	0.009			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5025		.5048	mg/L	100	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5025	.035	.5426	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5025	.035	.5359	mg/L	100	85	115	1	20	

Barium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9162	mg/L	96	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.009	0.009			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.0066	0.0066			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5025		.4967	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5025	U	.521	mg/L	104	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5025	U	.528	mg/L	105	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04604	mg/L	92	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05035		.04366	mg/L	87	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05035	U	.048	mg/L	95	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05035	U	.04724	mg/L	94	70	130	2	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Beryllium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04478	mg/L	90	90	110			
WG453420ICB	ICB	08/08/18 6:25				.000052	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05035		.0434	mg/L	86	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05035	.00045	.04638	mg/L	91	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05035	.00045	.04643	mg/L	91	70	130	0	20	

Bismuth, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.99	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.12	0.12			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.9993		.974	mg/L	97	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.9993	U	.974	mg/L	97	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.9993	U	.966	mg/L	97	85	115	1	20	

Bismuth, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.942	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.12	0.12			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.088	0.088			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.9993		.987	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.9993	U	.99	mg/L	99	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.9993	U	1	mg/L	100	70	130	1	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.042	mg/L	102	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.03	0.03			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5005		.515	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5005	.24	.741	mg/L	100	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5005	.24	.731	mg/L	98	85	115	1	20	

Boron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		2.048	mg/L	102	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.03	0.03			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.022	0.022			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5005		.514	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5005	.07	.571	mg/L	100	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5005	.07	.587	mg/L	103	70	130	3	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0508	mg/L	102	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.0481	mg/L	96	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	U	.04916	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	U	.04949	mg/L	99	70	130	1	20	

Cadmium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04945	mg/L	99	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.0472	mg/L	94	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0008	.04891	mg/L	96	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0008	.04948	mg/L	97	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		99.8	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	68.22088		69.5	mg/L	102	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	68.22088	27.8	97.02	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	68.22088	27.8	95.9	mg/L	100	85	115	1	20	

Calcium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		97.47	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	68.22088		69.54	mg/L	102	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	68.22088	521	585	mg/L	94	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	68.22088	521	590.5	mg/L	102	70	130	1	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	19.96		19.9	mg/L	100	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.4	0.4			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	30		29.1	mg/L	97	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	30		29.1	mg/L	97	90	110			
L45837-08DUP	DUP	08/07/18 2:16			U	U	mg/L				0	20	RA
L45837-09AS	AS	08/07/18 3:27	WI180430-12	15000	U	14800	mg/L	99	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05172	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.0011	0.0011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04647	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	U	.04726	mg/L	94	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	U	.04685	mg/L	94	70	130	1	20	

Chromium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05082	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0015	0.0015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.0011	0.0011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04612	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0115	.05772	mg/L	92	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0115	.05835	mg/L	94	70	130	1	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05199	mg/L	104	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04606	mg/L	92	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.00048	.04641	mg/L	92	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.00048	.04608	mg/L	91	70	130	1	20	

Cobalt, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05097	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04539	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0036	.04897	mg/L	91	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0036	.04967	mg/L	92	70	130	1	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453115													
WG453115LCSW2	LCSW	08/02/18 16:52	PCN55810	1410		1550	umhos/cm	110	90	110			
L45863-01DUP	DUP	08/02/18 19:00			5750	5740	umhos/cm				0	20	
WG453115LCSW5	LCSW	08/02/18 19:05	PCN55810	1410		1510	umhos/cm	107	90	110			
WG453115LCSW8	LCSW	08/02/18 23:18	PCN55810	1410		1470	umhos/cm	104	90	110			
WG453115LCSW11	LCSW	08/03/18 1:38	PCN55810	1410		1460	umhos/cm	104	90	110			
WG453115LCSW14	LCSW	08/03/18 4:43	PCN55810	1410		1440	umhos/cm	102	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04837	mg/L	97	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0491		.04365	mg/L	89	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0491	.0027	.04662	mg/L	89	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0491	.0027	.04595	mg/L	88	70	130	1	20	

Copper, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04662	mg/L	93	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0491		.04377	mg/L	89	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0491	.3172	.357	mg/L	81	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0491	.3172	.3597	mg/L	87	70	130	1	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453783													
WG453783ICV	ICV	08/10/18 14:58	WI180728-2	.3		.2832	mg/L	94	90	110			
WG453783ICB	ICB	08/10/18 14:59				U	mg/L		-0.003	0.003			
WG453737LRB	LRB	08/10/18 15:00				U	mg/L		-0.003	0.003			
L45868-02DUP	DUP	08/10/18 15:08			U	U	mg/L				0	20	RA
WG453737LFB	LFB	08/10/18 15:21	WI180727-11	.2		.1793	mg/L	90	90	110			
WG453783ICV1	ICV	08/10/18 17:07	WI180728-2	.3		.2729	mg/L	91	90	110			
WG453783ICB1	ICB	08/10/18 17:08				U	mg/L		-0.003	0.003			
L45868-03LFM	LFM	08/10/18 17:10	WI180727-11	.2	U	.1716	mg/L	86	90	110			M2

Cyanide, WAD SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452722													
WG452722ICV	ICV	07/28/18 15:19	WI180728-2	.3		.2708	mg/L	90	90	110			
WG452722ICB	ICB	07/28/18 15:20				U	mg/L		-0.003	0.003			
WG452666LRB	LRB	07/28/18 15:20				U	mg/L		-0.003	0.003			
WG452666LFB	LFB	07/28/18 15:21	WI180713-3	.2		.1962	mg/L	98	90	110			
L45825-01DUP	DUP	07/28/18 15:23			U	U	mg/L				0	20	RA
L45834-02LFM	LFM	07/28/18 15:25	WI180713-3	.2	.004	.2035	mg/L	100	90	110			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	4.012		3.86	mg/L	96	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.05	0.05			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	1.5		1.48	mg/L	99	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	1.5		1.47	mg/L	98	90	110			
L45837-08DUP	DUP	08/07/18 2:16			U	U	mg/L				0	20	RA
L45837-09AS	AS	08/07/18 3:27	WI180430-12	750	71.4	902	mg/L	111	90	110			M1

Gallium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.05	mg/L	103	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1		.98	mg/L	98	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1	U	1.02	mg/L	102	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1	U	1	mg/L	100	85	115	2	20	

Gallium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		2	mg/L	100	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1		1.01	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1	U	.86	mg/L	86	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1	U	.72	mg/L	72	70	130	18	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		1.965	mg/L	98	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.06	0.06			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.0018		1.037	mg/L	104	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.0018	U	1.029	mg/L	103	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.0018	U	1.021	mg/L	102	85	115	1	20	

Iron, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453161													
WG453161ICV	ICV	08/03/18 11:10	II180718-1	2		1.895	mg/L	95	95	105			
WG453161ICB	ICB	08/03/18 11:16				U	mg/L		-0.06	0.06			
WG452941LRB	LRB	08/03/18 11:29				U	mg/L		-0.044	0.044			
WG452941LFB	LFB	08/03/18 11:32	II180731-2	1.0018		.994	mg/L	99	85	115			
L45863-04LFM	LFM	08/03/18 12:37	II180731-2	1.0018	167	165.5	mg/L	-150	70	130			M3
L45863-04LFMD	LFMD	08/03/18 12:47	II180731-2	1.0018	167	164.7	mg/L	-230	70	130	0	20	M3

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.04974	mg/L	99	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0496		.04601	mg/L	93	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0496	U	.04793	mg/L	97	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0496	U	.04796	mg/L	97	70	130	0	20	

Lead, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04885	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0496		.04552	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0496	.002	.04914	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0496	.002	.04878	mg/L	94	70	130	1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.048	mg/L	102	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.024	0.024			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	1.003		.988	mg/L	99	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	1.003	.392	1.375	mg/L	98	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	1.003	.392	1.361	mg/L	97	85	115	1	20	

Lithium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9515	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.024	0.024			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.0176	0.0176			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	1.003		.965	mg/L	96	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	1.003	.12	1.12	mg/L	100	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	1.003	.12	1.122	mg/L	100	70	130	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		100.74	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	50.05667		49.89	mg/L	100	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	50.05667	1.5	51.98	mg/L	101	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	50.05667	1.5	51.27	mg/L	99	85	115	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		98.28	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	50.05667		49.69	mg/L	99	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	50.05667	108	156.9	mg/L	98	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	50.05667	108	158	mg/L	100	70	130	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05217	mg/L	104	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00088	0.00088			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05		.04803	mg/L	96	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05	.0033	.05302	mg/L	99	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05	.0033	.05233	mg/L	98	70	130	1	20	

Manganese, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05115	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0012	0.0012			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00088	0.00088			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05		.04792	mg/L	96	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05	.5934	.6466	mg/L	106	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05	.5934	.6454	mg/L	104	70	130	0	20	

Mercury, dissolved M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451339													
WG451339ICV	ICV	07/10/18 15:34	HG180622-4	10		11.1	ng/L	111	79	121			
WG451339ICB	ICB	07/10/18 15:39				U	ng/L		-0.5	0.5			
WG453728													
WG453728CCV	CCV	08/10/18 9:09	HG180622-4	10		10.3	ng/L	103	76.5	123.4			
WG453728CCB	CCB	08/10/18 9:14				U	ng/L		-0.5	0.5			
WG453728PQV	PQV	08/10/18 9:19	HG180622-6	.5		.54	ng/L	108	70	130			
WG453728LFB	LFB	08/10/18 9:24	HG180622-5	2		1.97	ng/L	99	71	125			
L45855-01MS	MS	08/10/18 9:39	HG180622-5	2	.8	2.74	ng/L	97	71	125			
L45855-01MSD	MSD	08/10/18 9:44	HG180622-5	2	.8	2.69	ng/L	95	71	125	2	24	
WG453728CCV1	CCV	08/10/18 9:53	HG180622-4	10		10.3	ng/L	103	76.5	123.4			
WG453728CCB1	CCB	08/10/18 9:58				U	ng/L		-0.5	0.5			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury, total M1631, Atomic Fluorescence

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451339													
WG451339ICV	ICV	07/10/18 15:34	HG180622-4	10		11.1	ng/L	111	79	121			
WG451339ICB	ICB	07/10/18 15:39				U	ng/L		-0.5	0.5			
WG453250													
WG453250CCV1	CCV	08/06/18 11:24	HG180622-4	10		10.5	ng/L	105	76.5	123.4			
WG453250CCB1	CCB	08/06/18 11:29				U	ng/L		-0.5	0.5			
WG453250PQV	PQV	08/06/18 11:34	HG180622-6	.5		.47	ng/L	94	70	130			
WG453250LFB	LFB	08/06/18 11:39	HG180622-5	2		1.78	ng/L	89	71	125			
WG453250CCV2	CCV	08/06/18 12:26	HG180622-4	10		10.1	ng/L	101	76.5	123.4			
WG453250CCB2	CCB	08/06/18 12:30				U	ng/L		-0.5	0.5			
L45865-01MS	MS	08/06/18 12:40	HG180622-5	2	1.5	3.41	ng/L	96	71	125			
L45865-01MSD	MSD	08/06/18 12:45	HG180622-5	2	1.5	2.95	ng/L	73	71	125	14	24	
WG453250CCV3	CCV	08/06/18 13:19	HG180622-4	10		9.55	ng/L	96	76.5	123.4			
WG453250CCB3	CCB	08/06/18 13:24				U	ng/L		-0.5	0.5			
WG453250CCV4	CCV	08/06/18 13:58	HG180622-4	10		9.79	ng/L	98	76.5	123.4			
WG453250CCB4	CCB	08/06/18 14:03				U	ng/L		-0.5	0.5			

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02006		.01967	mg/L	98	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.0011	0.0011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05015		.04482	mg/L	89	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05015	.0048	.05058	mg/L	91	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05015	.0048	.05125	mg/L	93	70	130	1	20	

Molybdenum, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02006		.01974	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0015	0.0015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.0011	0.0011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05015		.04567	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05015	.0215	.06912	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05015	.0215	.0696	mg/L	96	70	130	1	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05018	mg/L	100	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00132	0.00132			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04561	mg/L	91	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	.0026	.0473	mg/L	89	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	.0026	.04722	mg/L	89	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04997	mg/L	100	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0018	0.0018			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00132	0.00132			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04519	mg/L	90	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	.0107	.05476	mg/L	88	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	.0107	.05599	mg/L	90	70	130	2	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453225													
WG453225ICV	ICV	08/03/18 22:44	WI180602-1	2.416		2.392	mg/L	99	90	110			
WG453225ICB	ICB	08/03/18 22:45				U	mg/L		-0.02	0.02			
WG453228													
WG453228LFB	LFB	08/04/18 0:15	WI180703-7	2		1.904	mg/L	95	90	110			
L45718-01AS	AS	08/04/18 0:18	WI180703-7	2	1.75	3.691	mg/L	97	90	110			
L45718-02DUP	DUP	08/04/18 0:21			U	U	mg/L				0	20	RA

Nitrogen, ammonia M350.1 Auto Salicylate w/gas diffusion

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453252													
WG453252ICV	ICV	08/06/18 13:03	WI180626-2	11.988		12.139	mg/L	101	90	110			
WG453252ICB	ICB	08/06/18 13:05				U	mg/L		-0.05	0.05			
WG453275													
WG453275LFB	LFB	08/06/18 14:45	WI171219-5	10		9.968	mg/L	100	90	110			
L45718-01AS	AS	08/06/18 14:48	WI171219-5	10	U	9.92	mg/L	99	90	110			
L45719-02DUP	DUP	08/06/18 14:51			.12	.149	mg/L				22	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452883													
WG452883LCSW1	LCSW	07/31/18 13:56	PCN55475	6.01		6.1	units	101	5.9	6.1			
L45855-01DUP	DUP	07/31/18 15:58			10.3	10.4	units				1	20	
WG452883LCSW4	LCSW	07/31/18 17:51	PCN55475	6.01		6	units	100	5.9	6.1			
WG452883LCSW7	LCSW	07/31/18 21:25	PCN55475	6.01		6.1	units	101	5.9	6.1			
WG452883LCSW10	LCSW	08/01/18 0:42	PCN55475	6.01		6	units	100	5.9	6.1			
WG452883LCSW13	LCSW	08/01/18 3:29	PCN55475	6.01		6.1	units	101	5.9	6.1			

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452913													
WG452913ICV	ICV	07/31/18 21:37	WI180702-6	.65228		.672	mg/L	103	90	110			
WG452913ICB	ICB	07/31/18 21:39				U	mg/L		-0.02	0.02			
WG452914													
WG452841LRB	LRB	07/31/18 22:12				U	mg/L		-0.02	0.02			
WG452841LFB	LFB	07/31/18 22:13	WI180720-8	.5		.491	mg/L	98	90	110			
L45855-01LFM	LFM	07/31/18 22:15	WI180720-8	.5	U	.401	mg/L	80	90	110			M2
L45877-01DUP	DUP	07/31/18 22:18			.02	.027	mg/L				30	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	20		20.22	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	99.72934		102.3	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	99.72934	13.8	117.5	mg/L	104	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	99.72934	13.8	116	mg/L	102	85	115	1	20	

Potassium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	20		19.61	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	99.72934		101	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	99.72934	28	129.8	mg/L	102	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	99.72934	28	131.2	mg/L	103	70	130	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452598													
WG452598PBW	PBW	07/26/18 15:27				U	mg/L		-20	20			
WG452598LCSW	LCSW	07/26/18 15:30	PCN56360	260		258	mg/L	99	80	120			
L45863-04DUP	DUP	07/26/18 16:44			4250	4270	mg/L				0	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452695													
WG452695PBW	PBW	07/27/18 14:33				U	mg/L		-15	15			
WG452695LCSW	LCSW	07/27/18 14:36	PCN56360	160		156	mg/L	98	80	120			
L45877-01DUP	DUP	07/27/18 15:14			U	U	mg/L				0	10	RA

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Scandium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.3	0.3			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.9868		1	mg/L	101	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.9868	U	1.03	mg/L	104	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.9868	U	1	mg/L	101	85	115	3	20	

Scandium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.96	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.3	0.3			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.22	0.22			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.9868		1.02	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.9868	U	1.02	mg/L	103	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.9868	U	1.03	mg/L	104	70	130	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0493	mg/L	99	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04509	mg/L	90	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.0026	.05173	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.0026	.05152	mg/L	98	70	130	0	20	

Selenium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04918	mg/L	98	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.04628	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	U	.04698	mg/L	94	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	U	.0473	mg/L	95	70	130	1	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.02004		.02063	mg/L	103	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00011	0.00011			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.01002		.009423	mg/L	94	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.01002	U	.008798	mg/L	88	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.01002	U	.008709	mg/L	87	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Silver, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.02004		.02027	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.00015	0.00015			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00011	0.00011			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.01002		.009522	mg/L	95	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.01002	U	.009531	mg/L	95	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.01002	U	.009572	mg/L	96	70	130	0	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	100		101.14	mg/L	101	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.6	0.6			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	100.6711		102.9	mg/L	102	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	100.6711	197	291.7	mg/L	94	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	100.6711	197	290.8	mg/L	93	85	115	0	20	

Sodium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	100		99.12	mg/L	99	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.6	0.6			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.44	0.44			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	100.6711		103.3	mg/L	103	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	100.6711	357	458.7	mg/L	101	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	100.6711	357	460.8	mg/L	103	70	130	0	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.0078	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.015	0.015			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.5015		.5166	mg/L	103	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.5015	1.03	1.512	mg/L	96	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.5015	1.03	1.499	mg/L	94	85	115	1	20	

Strontium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9332	mg/L	97	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.015	0.015			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.011	0.011			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.5015		.5077	mg/L	101	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.5015	1.6	2.096	mg/L	99	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.5015	1.6	2.11	mg/L	102	70	130	1	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG451559													
WG451559ICV	ICV	07/12/18 0:46	WI180625-3	50		50.2	mg/L	100	90	110			
WG451559ICB	ICB	07/12/18 1:04				U	mg/L		-0.4	0.4			
WG452953													
WG452953LFB1	LFB	08/06/18 17:00	WI180430-12	30		29.4	mg/L	98	90	110			
WG452953LFB2	LFB	08/07/18 1:40	WI180430-12	30		29.3	mg/L	98	90	110			
L45837-08DUP	DUP	08/07/18 2:16			3500	3510	mg/L				0	20	
L45837-09AS	AS	08/07/18 3:27	WI180430-12	15000	34400	48500	mg/L	94	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05101	mg/L	102	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0501		.04738	mg/L	95	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0501	U	.04912	mg/L	98	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0501	U	.04914	mg/L	98	70	130	0	20	

Thallium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05091	mg/L	102	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0501		.04553	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0501	U	.04682	mg/L	93	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0501	U	.04648	mg/L	93	70	130	1	20	

Tin, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.0501		.04642	mg/L	93	90	110			
WG453574ICB	ICB	08/08/18 23:41				.00046	mg/L		-0.00022	0.00022			B1
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.0502		.04398	mg/L	88	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.0502	U	.04368	mg/L	87	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.0502	U	.04472	mg/L	89	70	130	2	20	

Tin, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.0501		.04553	mg/L	91	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.0502		.04578	mg/L	91	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.0502	U	.03436	mg/L	68	70	130			M2
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.0502	U	.03434	mg/L	68	70	130	0	20	M2

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Titanium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452868													
WG452868ICV	ICV	07/31/18 13:25	II180727-1	2		2.0268	mg/L	101	95	105			
WG452868ICB	ICB	07/31/18 13:32				U	mg/L		-0.015	0.015			
WG452868LFB	LFB	07/31/18 13:45	II180726-2	.995		.9954	mg/L	100	85	115			
L45749-04AS	AS	07/31/18 14:01	II180726-2	.995	U	.9845	mg/L	99	85	115			
L45749-04ASD	ASD	07/31/18 14:04	II180726-2	.995	U	1	mg/L	101	85	115	2	20	

Titanium, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.9665	mg/L	98	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.015	0.015			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.011	0.011			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.995		.9971	mg/L	100	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.995	U	1.009	mg/L	101	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.995	U	1.024	mg/L	103	70	130	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.05065	mg/L	101	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00022	0.00022			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05		.04694	mg/L	94	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05	.0035	.05427	mg/L	102	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05	.0035	.05443	mg/L	102	70	130	0	20	

Uranium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.05065	mg/L	101	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0003	0.0003			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00022	0.00022			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05		.04815	mg/L	96	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05	.0015	.05209	mg/L	101	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05	.0015	.05234	mg/L	102	70	130	0	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453574													
WG453574ICV	ICV	08/08/18 23:38	MS180730-1	.05		.0485	mg/L	97	90	110			
WG453574ICB	ICB	08/08/18 23:41				U	mg/L		-0.00044	0.00044			
WG453574LFB	LFB	08/08/18 23:44	MS180806-8	.05005		.04554	mg/L	91	85	115			
L45858-03AS	AS	08/09/18 0:43	MS180806-8	.05005	.0008	.04822	mg/L	95	70	130			
L45858-03ASD	ASD	08/09/18 0:47	MS180806-8	.05005	.0008	.04803	mg/L	94	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Vanadium, total M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453420													
WG453420ICV	ICV	08/08/18 6:22	MS180730-1	.05		.04805	mg/L	96	90	110			
WG453420ICB	ICB	08/08/18 6:25				U	mg/L		-0.0006	0.0006			
WG453039LRB	LRB	08/08/18 6:29				U	mg/L		-0.00044	0.00044			
WG453039LFB	LFB	08/08/18 6:32	MS180621-2	.05005		.046	mg/L	92	85	115			
L45864-01LFM	LFM	08/08/18 7:57	MS180621-2	.05005	.0036	.05052	mg/L	94	70	130			
L45864-01LFMD	LFMD	08/08/18 8:00	MS180621-2	.05005	.0036	.05077	mg/L	94	70	130	0	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG452799													
WG452799ICV	ICV	07/30/18 13:52	II180727-1	2		2.009	mg/L	100	95	105			
WG452799ICB	ICB	07/30/18 13:58				U	mg/L		-0.03	0.03			
WG452799LFB	LFB	07/30/18 14:10	II180726-2	.4942		.545	mg/L	110	85	115			
L45855-01AS	AS	07/30/18 14:34	II180726-2	.4942	U	.538	mg/L	109	85	115			
L45855-01ASD	ASD	07/30/18 14:37	II180726-2	.4942	U	.528	mg/L	107	85	115	2	20	

Zinc, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453073													
WG453073ICV	ICV	08/02/18 20:31	II180718-1	2		1.923	mg/L	96	95	105			
WG453073ICB	ICB	08/02/18 20:37				U	mg/L		-0.03	0.03			
WG452941LRB	LRB	08/02/18 20:50				U	mg/L		-0.022	0.022			
WG452941LFB	LFB	08/02/18 20:54	II180731-2	.4942		.538	mg/L	109	85	115			
L45863-04LFM	LFM	08/02/18 21:58	II180731-2	.4942	3.67	4.101	mg/L	87	70	130			
L45863-04LFMD	LFMD	08/02/18 22:08	II180731-2	.4942	3.67	4.12	mg/L	91	70	130	0	20	

SPF Water Engineering

ACZ Project ID: ***L45855***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L45855-01	WG452953	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453783	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452722	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452953	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453161	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG453228	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453275	Nitrogen, ammonia	M350.1 Auto Salicylate w/gas diffusion	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452914	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG452695	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG453574	Tin, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG453420	Tin, total	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

SPF Water Engineering ACZ Project ID: ***L45855***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP
Tin, dissolved	M200.8 ICP-MS
Tin, total	M200.8 ICP-MS

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID: L45855
Date Received: 07/26/2018 11:46
Received By:
Date Printed: 7/27/2018

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Copy of Report to: E-Mail. Sample ID: Matrix section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?	X		
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
5059	5.7	<=6.0	17	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

SPF Water Engineering

ACZ Project ID:	L45855
Date Received:	07/26/2018 11:46
Received By:	
Date Printed:	7/27/2018

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L45855

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Kurt Newbry	Address: 300 E. Mallard Drive, Suite 350
Company: SPF Water Engineering	Boise, ID 83706
E-mail: Knewbry@spfwater.com	Telephone: (208) 520-9173

Copy of Report to:

Name: Jason Thompson	E-mail: Jthompson@spfwater.com
Company: SPF	Telephone:

Invoice to:

Name: same	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes ☐ No ✓

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Kurt Newbry **Sampler's Site Information** **State** OR **Zip code** 97913 **Time Zone** MTN

***Sampler's Signature:** [signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #:

PO#:

Reporting state for compliance testing: OR

Check box if samples include NRC licensed material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	B039852							
GMW 17-32	7/25/18 11:36	GW		✓							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	7/25/18 16:39	[signature]	7.26.18 1146

L45855 Chain of Custod

ZRMAD050 06.14.14 White - Return with sample. Yellow - Retain for your records. Page 30 of 31

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order
Bottle List

Account: SPFWATER/SPF Water Engineering
Bottle Order: BO39852

Bill to Account: Bill to ACZ
Ship Date Requested: 05/15/2018
Request Placed at: 05/11/2018 12:10
Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	1	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	9	LABELS	Sample Labels	ACZ supplied labels for sample containers
	1	TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	5059	Medium	10	1Z8101300317192932

Quote number: SPF-2017-GW
Sample Quantity: 1

Quarterly Analysis of Groundwater and Springs

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	125 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	HG-1631	250 ML	Mercury 1631	Mercury by 1631 - See method specific sampling instructions.
	1	HG-1631 D	250 ML	Mercury 1631 Dissolved	Mercury (dissolved) by 1631 - See method specific sampling instructions.
	1	PURPLE	250 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.
	1	YELLOW	250 ML	Raw/Sulfuric	For total wet chemistry analyses. Do not overfill as there is Sulfuric Acid in the bottle.

Prepared By/Date: _____

wpl

Grassy Mountain Gold Project Groundwater
Vol. II, Groundwater Characterization Report

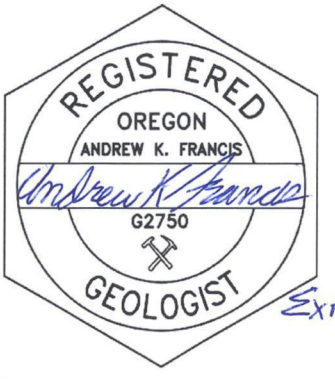
Prepared for

Calico Resources USA Corp
665 Anderson Street
Winnemucca, Nevada 89445

Prepared by

SPF Water Engineering, LLC
300 East Mallard, Suite 350
Boise, Idaho 83706
(208) 383-4140

December 8, 2021



Exp: 4-1-22

SPF WATER ENGINEERING

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1 INTRODUCTION

This groundwater characterization report has been prepared to describe the groundwater conceptual model for the Calico Resources USA Corp's (Calico) Grassy Mountain Gold Project (Project). The groundwater conceptual model was defined as an objective of the groundwater resources baseline study in the *Environmental Baseline Study Work Plans, Grassy Mountain Project* (EM Strategies 2017) referred to as the Work Plan in this report.

The 2017 Work Plan Section 3.4.1 states the following as objectives of the groundwater baseline study:

- *Develop a conceptual model of the nature and interaction of the various water-bearing units and aquitards in relation to relevant geologic structures. The conceptual model should identify which water-bearing units are hydraulically*

connected (i.e., the same aquifer) and whether each aquifer is unconfined, semi-confined, or confined.

- *Accurately characterize the study area ground water resources, both quality and quantity, and the pre-project "environmental baseline." This includes springs in the vicinity of Grassy Mountain.*

The *Groundwater Resources Baseline Data Report, Grassy Mountain Gold Project* (SPF, 2021a summarizes the groundwater baseline data as required by the Work Plan for the proposed Grassy Mountain Gold Project, including:

- A description of sampling and monitoring events, including water quality, spring flow, and groundwater levels
- Sampling sites, including monitoring wells, baseline springs, and background springs
- Data collection methods
- Groundwater levels, both manual and continuous measurements
- Groundwater contour maps
- Spring and artesian well flow data
- Groundwater quality data from both wells and springs
- Comparison of groundwater quality data to drinking water standards (wells) and to drinking water standards and water quality standards (springs)
- Geochemical analysis of wells and springs
- Quality assurance and quality control results

This groundwater characterization report is intended to evaluate and analyze the groundwater baseline data and other relevant information to develop a groundwater conceptual model of the Project to meet the objectives of the Work Plan.

2 WATER RESOURCES STUDY AREA

The Project is located in Malheur County, Oregon, approximately 22 miles south-southwest of Vale (Figure 1) and consists of two areas: The Mine and Process Area and the Access Road Area (Permit Area) (Figure 2).

The Mine and Process Area is located on three patented lode mining claims and unpatented lode mining claims that cover an estimated 886 acres. These patented and unpatented lode mining claims are part of a larger land position that includes 455 unpatented lode mining claims and nine mill site claims on lands administered by the Bureau of Land Management (BLM) (Figure 2). All proposed mining would occur on the patented claims, with some mine facilities on unpatented claims. The Mine and Process Area is in all or portions of Sections 5 through 8, Township 22 South, Range 44 East (T22S, R44E) (Willamette Meridian).

The Access Road Area is located on public land administered by the BLM, and private land controlled by others (Figure 2). A portion of the Access Road Area is a Malheur County Road

named Twin Springs Road. The Access Road Area extends north from the Mine and Process Area to Russell Road, a paved Malheur County road. The Access Road Area is in portions of Section 5, T22S, R44E, Sections 3, 10, 11, 14, 15, 21 through 23, 28, 29, and 32, T21S, R44E, Sections 1, 12 through 14, 23, 26, 27, and 34, T20S, R44E, Sections 6 and 7, T20S, R45E, and Sections 22, 23, 26, 35, and 36, T19S, R44E (Willamette Meridian). The width of the Access Road Area is 300 feet (150 feet on either side of the access road centerline) to accommodate possible minor widening or rerouting, and a potential powerline adjacent to the access road. There are several areas shown that are significantly wider than 300 feet on the Permit Area Map (Figure 2), which are areas where the final alignment has not yet been determined. The final engineering of the road will be consistent throughout, and within the Permit Area. The Access Road Area also includes a buffer on either side of the proposed road width for the collection of environmental baseline data. The road corridor will be approximately 30 feet wide. The Access Road Area totals approximately 876 acres.

The Water Resources Study Area (Study Area) was established to develop an environmental water resources baseline for assessing potential impacts from Project facilities and to provide background data on nearby springs and on the Owyhee River and Lake. The Study Area includes an area encompassing the Mine and Process Area and two separate, non-contiguous, areas on the Owyhee River/Lake. A map of the Study Area is included as Figure 3. All of the baseline well and spring sites are located within the Study Area.

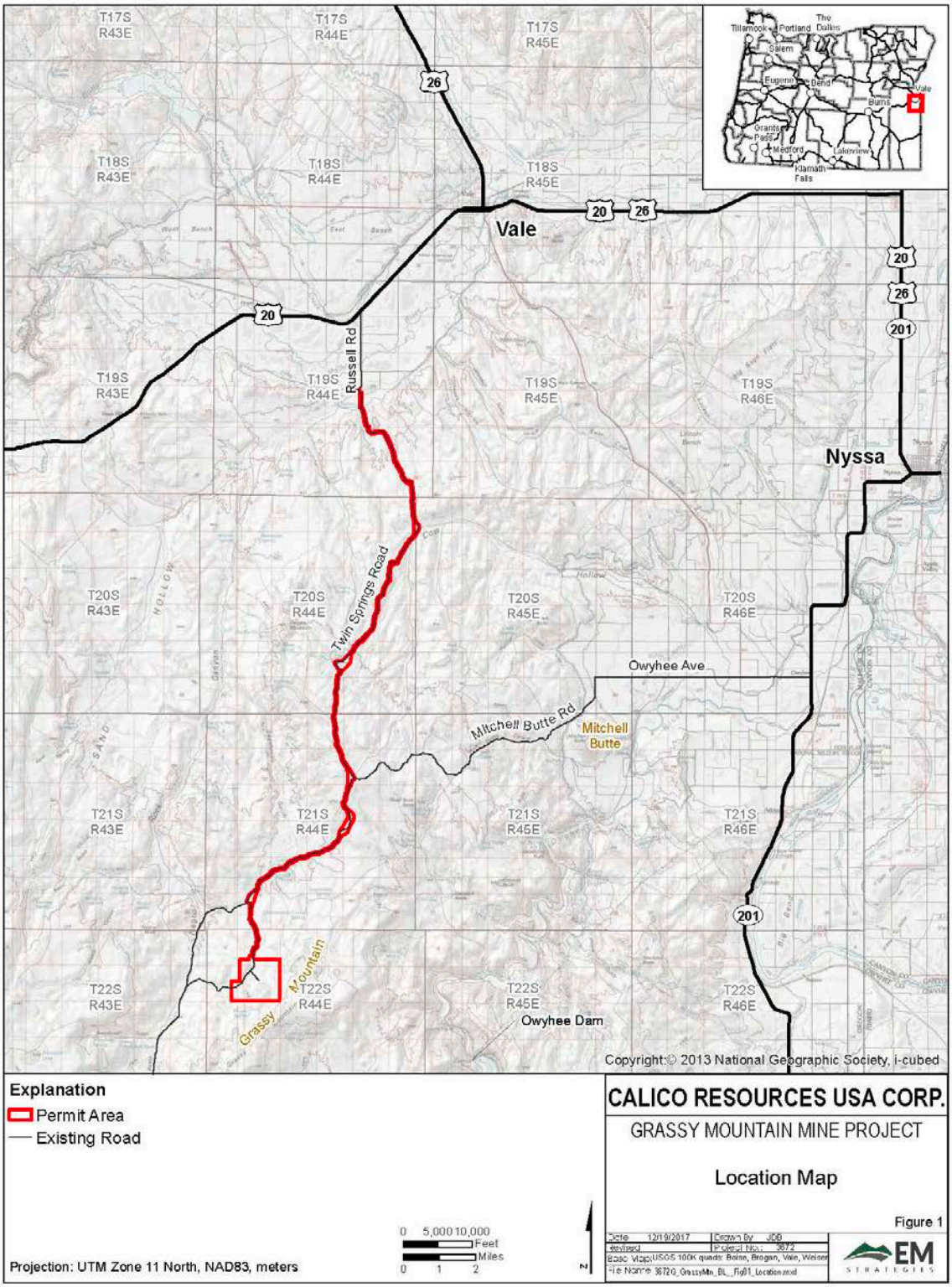


Figure 1. Project Location

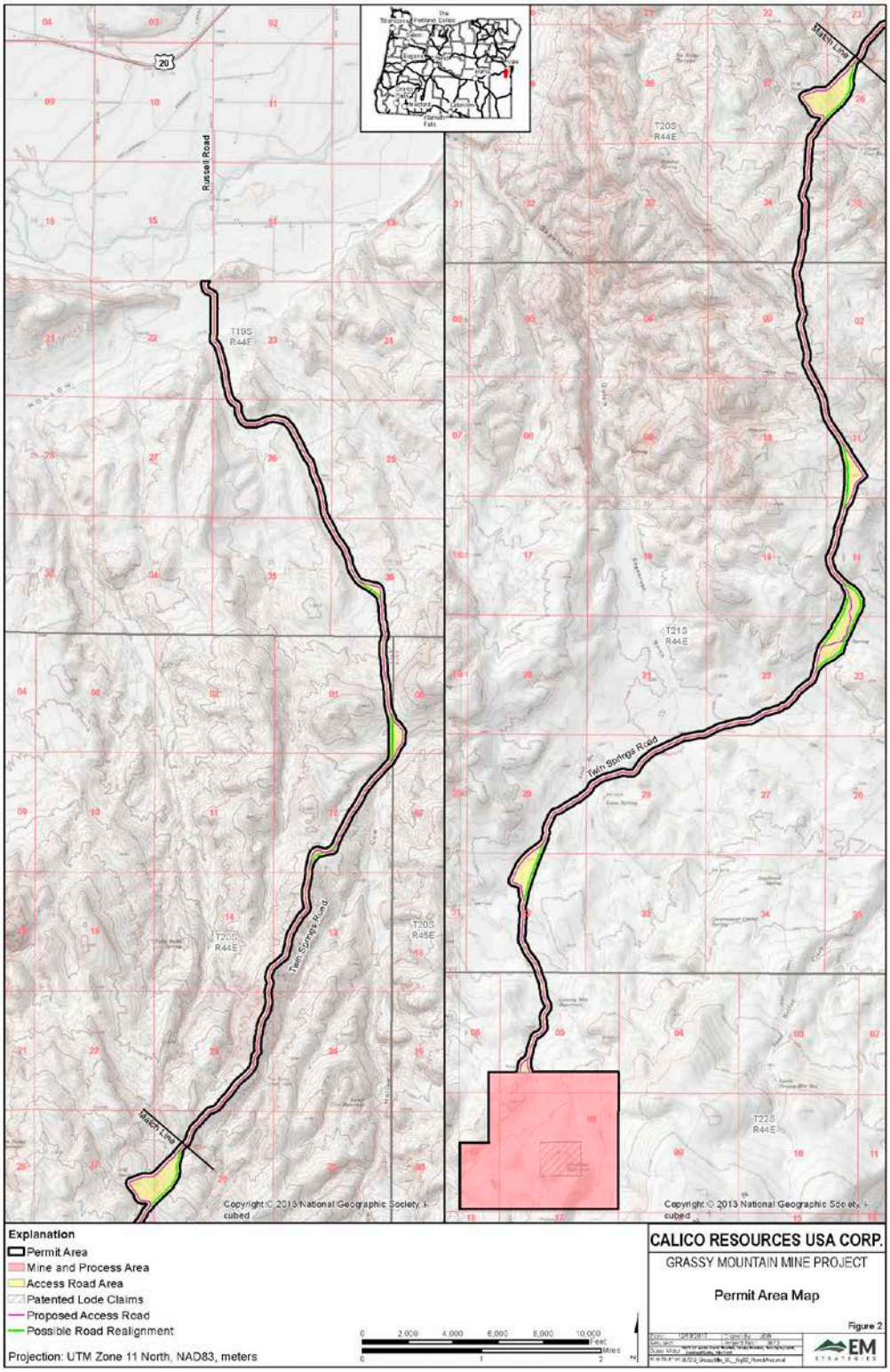


Figure 2. Permit Area

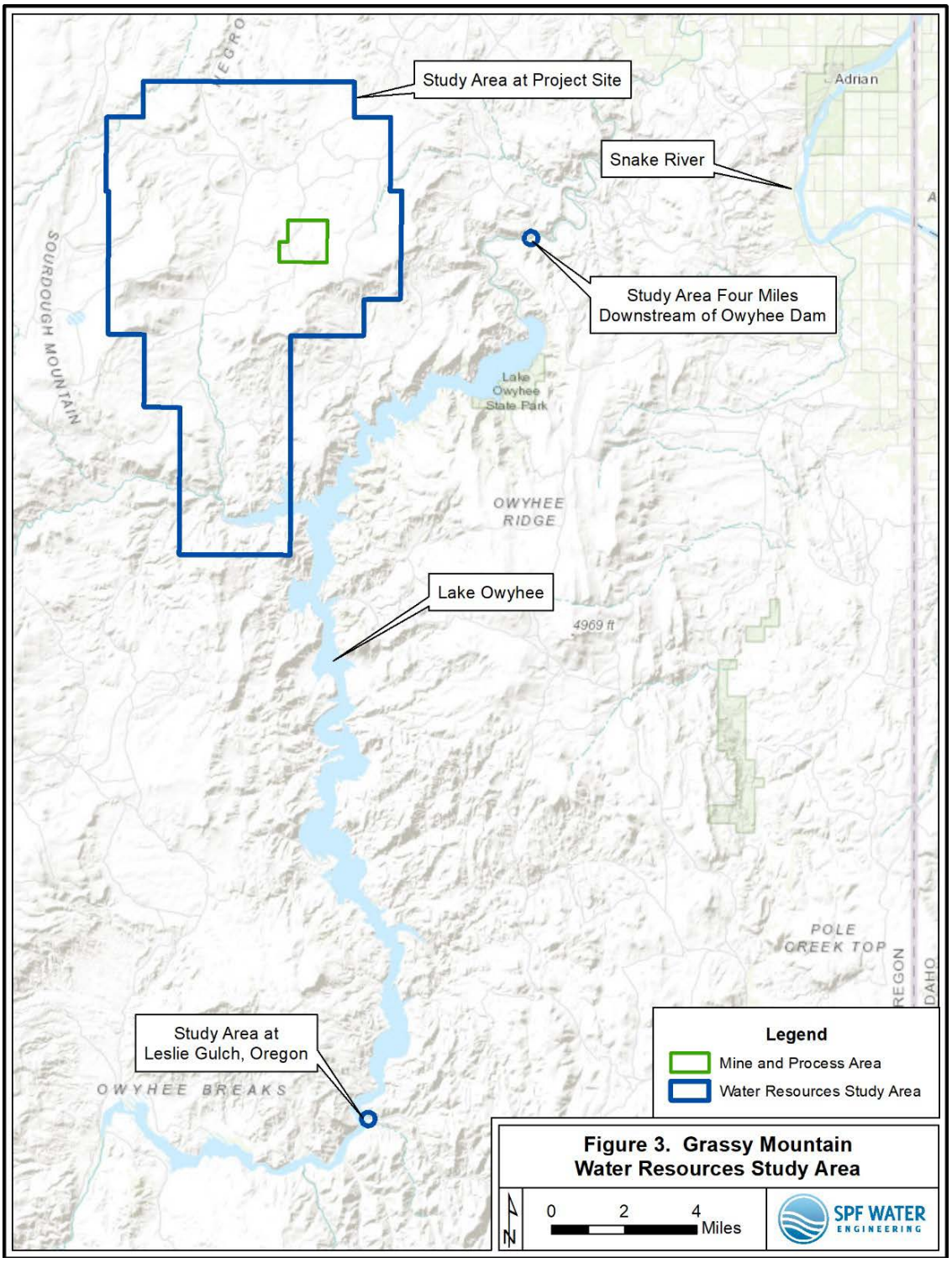


Figure 3. Grassy Mountain Water Resources Study Area

3 GEOLOGIC SETTING

3.1 Regional Geology

The following is excerpted from *Calico Resources USA Corp, Grassy Mountain Gold Project, Malheur County, Oregon, Geology and Soils Baseline Report* (Abrams, 2018):

Grassy Mountain is the largest of 12 recognized epithermal hot spring precious metal deposits of the Lake Owyhee volcanic field. The Lake Owyhee volcanic field occurs at the intersection of three tectonic provinces: the buried cratonic margin; the northern basin and range; and the Snake River Plain. During the mid-Miocene, large volume, peralkaline, caldera volcanism occurred in response to large, silicic magma chambers emplaced in the shallow crust throughout the region. The volcanic field includes several caldera-sourced ash-flow sheets and rhyolite tuff cones that were deposited from 15.5 to 15 million years ago (Ma).

At about 15 Ma, subsidence of the Lake Owyhee volcanic field triggered a change in volcanic eruption style, resulting in small volume, basalt-rhyolite deposits of limited extent. Volcanism during the mid to late Miocene is evidenced by small volume, metaluminous, high-silica rhyolite domes and flows, and small volume basalt flows and mafic vent complexes in north- and northwest-trending basin and range-type fracture zones and ring structures related to resurgent calderas. Regional extension and subsidence facilitated the formation of through-going fluvial systems and extensive lacustrine basins. Large volumes of fluvial sediments, sourced from the exhumed Idaho Batholith to the southeast were deposited in conjunction with volcanism and hot spring activity during the waning stages of volcanic field development. The resulting regional stratigraphic section is a thick sequence of mid-Miocene volcanic rocks and coeval-to-Pliocene age non-marine lacustrine, volcaniclastic, and fluvial sedimentary rocks.

A general description of the regional surficial geology is presented on a geologic map of Oregon (Ferns, et. al., 1993). Excerpts from this map are presented in Appendix A. Figure A1 shows that in the general vicinity of the Project, there is geologic unit *Tsau,* described as upper arkosic sandstone, conglomerate, and tuffaceous siltstone (upper and middle Miocene era). This unit is also referred to as the Grassy Mountain Formation. To the east of the Project, geologic unit *Tbcu* occurs, described as upper calc-alkaline lava flows (upper and middle Micocene). Holocene-age alluvium (*Qal*) occurs within the Twin Springs drainage to the west of the Project and to a lesser extent in the minor drainage extending north from the deposit. Figure A1 also shows the major faults near the Project.

Figure A2 includes the geologic map as a base with the surface water hydrologic unit borders, highlighted strikes and dips of the beds in unit *Tsau* (the Grassy Mountain Formation), and springs with their corresponding elevations. This map shows the contact between the Grassy Mountain Formation and the underlying Tuff of Kern Basin (unit *Ttkb*) where it surfaces at higher elevations to the west, south, southeast, and southwest on Grassy Mountain and Sourdough Mountain. The Grassy Mountain Formation generally strikes from east to west and dips towards the north with faulting, fractures, and folding that, in the vicinity of the Project site, create two graben or syncline features that extend down Negro Rock Canyon and

Sourdough Gulch. Between these two basin features is a horst block or anticline where the Tuff of Kern Basin surfaces approximately 0.9 miles west of the proposed Grassy Mountain Mine.

3.2 Study Area Geology

3.2.1 Geology in the Vicinity of Mine and Process Area

All of section 3.2 is excerpted from Abrams, 2018. Figure numbers have been updated from Abrams to fit sequentially within this report.

A representative stratigraphic column of the geologic units near the Mine and Process Area is included as Figure 4.

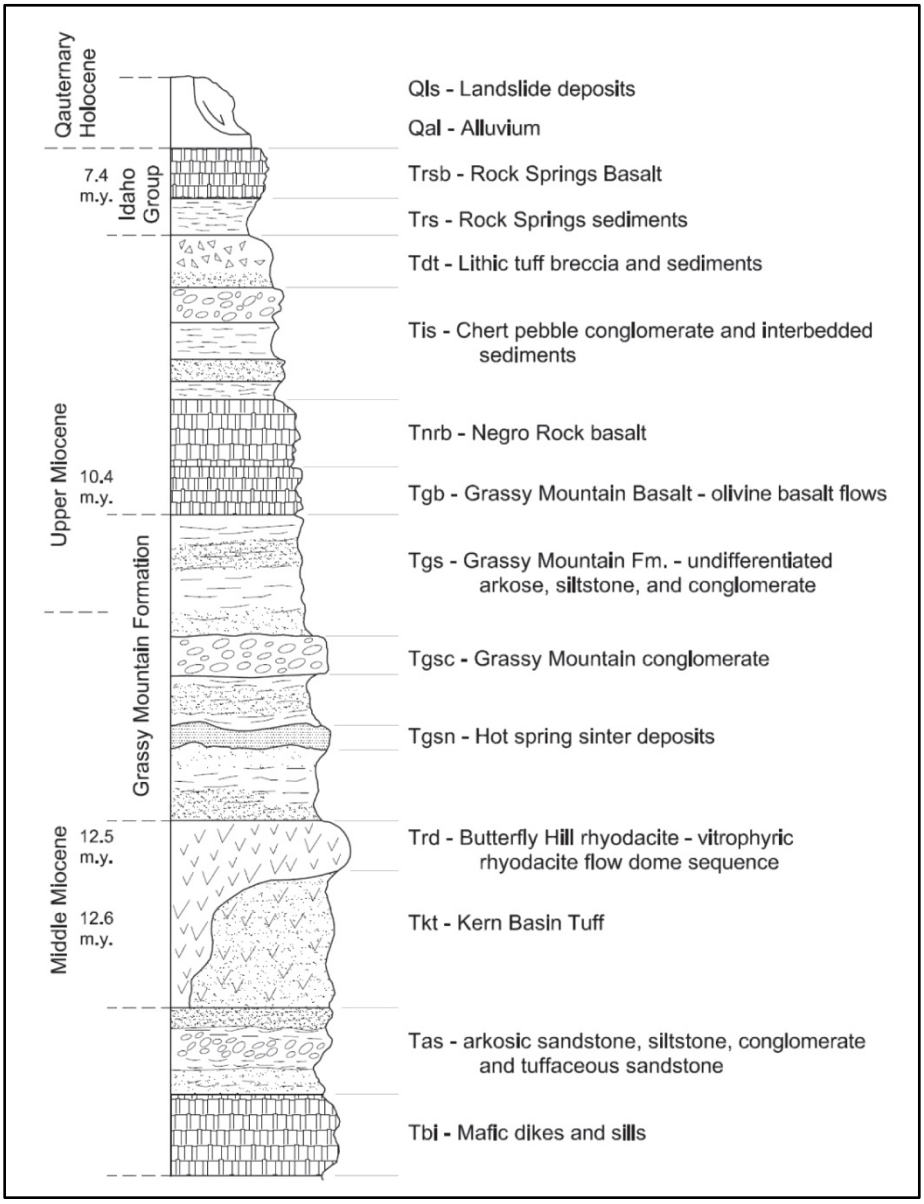


Figure 4. Representative stratigraphic column

Table 1 describes the stratigraphic column in more detail. The table describes the geologic units mapped near the Mine and Process Area, the unit's age and lithologic description, and provides the map symbols used to cross reference with the geologic units shown on Figure 5.

Table 1. Description of stratigraphic column

Map Symbol	Rock Unit	Age (millions of years before present in parentheses)	Description
Qal	Alluvium	Pleistocene and Holocene	Unconsolidated and generally poorly sorted deposits or gravel, sand and silt accumulated along modern streams, drainages and floodplains
Qls	Landslide deposits	Pleistocene and Holocene	Landslide and slump deposits of unconsolidated and unstratified soil and angular rock fragments formed as the result of bedrock failure. Includes large slump and debris flows composed of blocks of capping basalt on the flanks of Grassy Mountain and Sourdough Basin
Trsb	Rock Spring Basalt	Upper Miocene (7.4 Ma)	Snake River type olivine basalt flows and interbedded deposits of tuffaceous siltstone and sandstone. Unit is made up of approximately equal amounts of volcanic flows and interflow sedimentary rocks. Trsb flows range from two to 20 feet thick. Entire unit of basalt with sedimentary interbeds reaches maximum thickness of 400 feet east of Shell Rock Butte
Trs	Rock Spring Basalt – tuffaceous siltstone and sandstone	Upper Miocene	Sandstone and tuffaceous siltstone interbedded with unit Trsb are mapped separately where well exposed. Upper beds are mainly tuffaceous siltstones and include some bentonitic clays
Tdt	Lithic tuff breccias	Upper Miocene	Mafic clast lithic tuff, airfall tuffs and overlying reworked tuffaceous silt and sandstones. Breccia clasts include yellow inflated pumice and basaltic scoria. Distinguished from Tkt by absence of banded rhyolite clasts and absence of biotite and hornblende phenocrysts that are present in Tkt. Unit is approximately 80 feet thick in western portion of map.

Map Symbol	Rock Unit	Age (millions of years before present in parentheses)	Description
			Unconformably overlies Tis and is conformably overlain by Trsb
Tnrb	Negro Rock Basalt	Upper Miocene	Dark brownish gray, locally flow banded basalt. Dikes, plugs and sills are common. Typically, higher Fe/Mg ratios and much lower chromium content than Tgb or Trsb
Tgb	Grassy Mountain Basalt	Upper Miocene (10.4 Ma)	Flow on flow sequence of olivine basalts capping the summit of Grassy Mountain; includes somewhat younger intra-canyon flows forming benches on the south side of Grassy Mountain. Locally includes overlying stream gravels containing chert pebbles and large rounded basalt clasts. Maximum thickness of 200 feet; individual flows up to 40 feet thick
Tis	Interbedded conglomerate and siltstone	Upper Miocene	Chert pebble conglomerate and interbedded diatomaceous siltstone. Mainly tuffaceous and arkosic sandstone and siltstone with interbedded conglomerate. Locally becomes finer grained upward into pale, white and yellow claystones and interbedded diatomaceous siltstones. Presumed base of Tis near Grassy Mountain Reservoir contains black chert-pebble and granite-clast conglomerate. Erosional contact with underlying unit Tgs marked by rounded boulders of olivine basalt unit Tgb. Unit is approximately 400 feet thick in mapped area
Tgs	Grassy Mountain Formation – undifferentiated	Upper and Middle Miocene	Arkosic sandstones and channel-fill granite clast conglomerates. Mainly white to tan arkosic sandstones. Includes Tgsc, channel fill conglomerates with abundant granite and rhyolite clasts in the upper part of the unit. Uppermost conglomerates locally contain rounded obsidian clasts and rare black chert clasts. Unit Tgs generally

Map Symbol	Rock Unit	Age (millions of years before present in parentheses)	Description
			becomes finer grained upward and includes white bentonitic clays near the top of the section which, where overlain by unit Tgb often generated large landslide masses. Hot spring activity contemporaneous with the deposition of the arkoses is indicated by sinter beds Tgsn, and sinter boulders containing silicified reeds and wood near the Grassy mountain gold deposit. Unit Tgs is the host for both the Grassy Mountain and Crabgrass gold deposits
Tgsc	Grassy Mountain Formation – Conglomerate		Conglomerates occurring in the upper portion of Tgs – mapped individually where possible
Tgsn	Grassy Mountain Formation – Sinter		Hot spring sinter deposits within Tgs – mapped individually where possible
Trd	Butterfly Hill Rhyodacite	Middle Miocene (12.5 Ma)	Ryodacite flow dome complex
Tkt	Kern Basin Tuff	Middle Miocene	Mainly non-welded fine-grained, white to pale-yellow lithic tuff contain basalt, banded rhyolite, and white pumice clasts with biotite, hornblende, quartz and plagioclase crystals. Includes thinly bedded airfall tuffs at the base of the unit and overlying thin lenses of interbedded tuffaceous and arkosic sandstone and granite-clast conglomerate. Locally includes chaotically bedded airfall tuff with slump structures and massive surge deposits of matrix-supported lithic tuff composed of rhyolite and pumice clasts. Pumice clasts in the lithic tuff deposits increase in abundance and size toward the top of the unit. Uncomformably overlies unit Tas

Map Symbol	Rock Unit	Age (millions of years before present in parentheses)	Description
Tas	Arkosic and tuffaceous sandstone	Middle Miocene	Arkosic and tuffaceous sandstone, siltstone and conglomerate. Mainly white to tan arkosic sandstone with minor amounts of granite-clast conglomerate. Includes 20 feet thick massive beds of coarse matrix supported, granite-clast conglomerate near the exposed base of the unit
Tbi	Mafic dikes and sills	Middle Miocene	Mafic dikes and sills. Younger sequence includes irregularly shaped sills and dikes that intrude units Tas, Tkt and Tgs along both flanks of Grassy Mountain. Dikes and sills are olivine basalts believed to be feeders to units Tbg and Trsb. Dike cut through lowermost flows of unit Trsb north of Grassy Mountain near Willow Spring

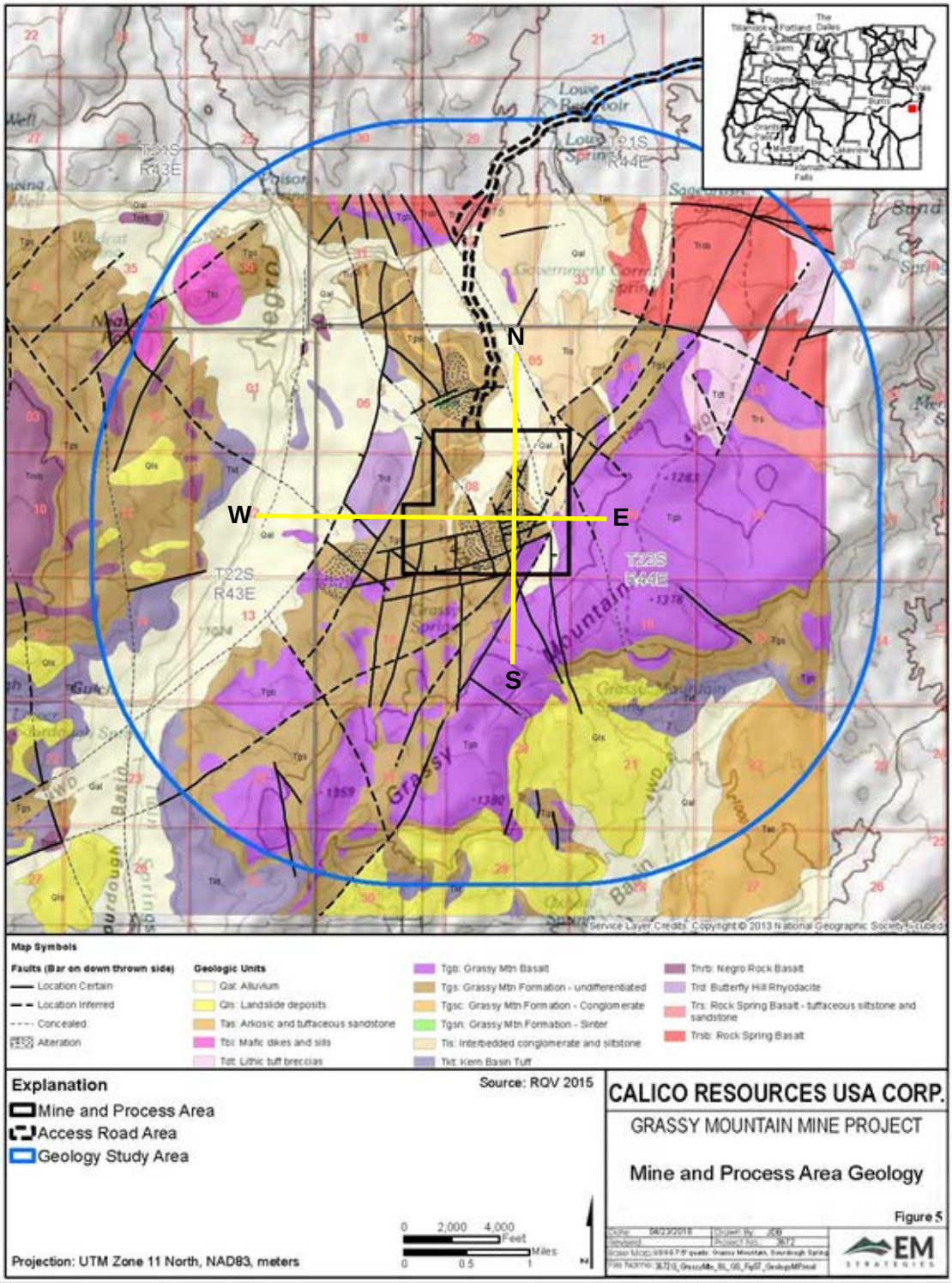
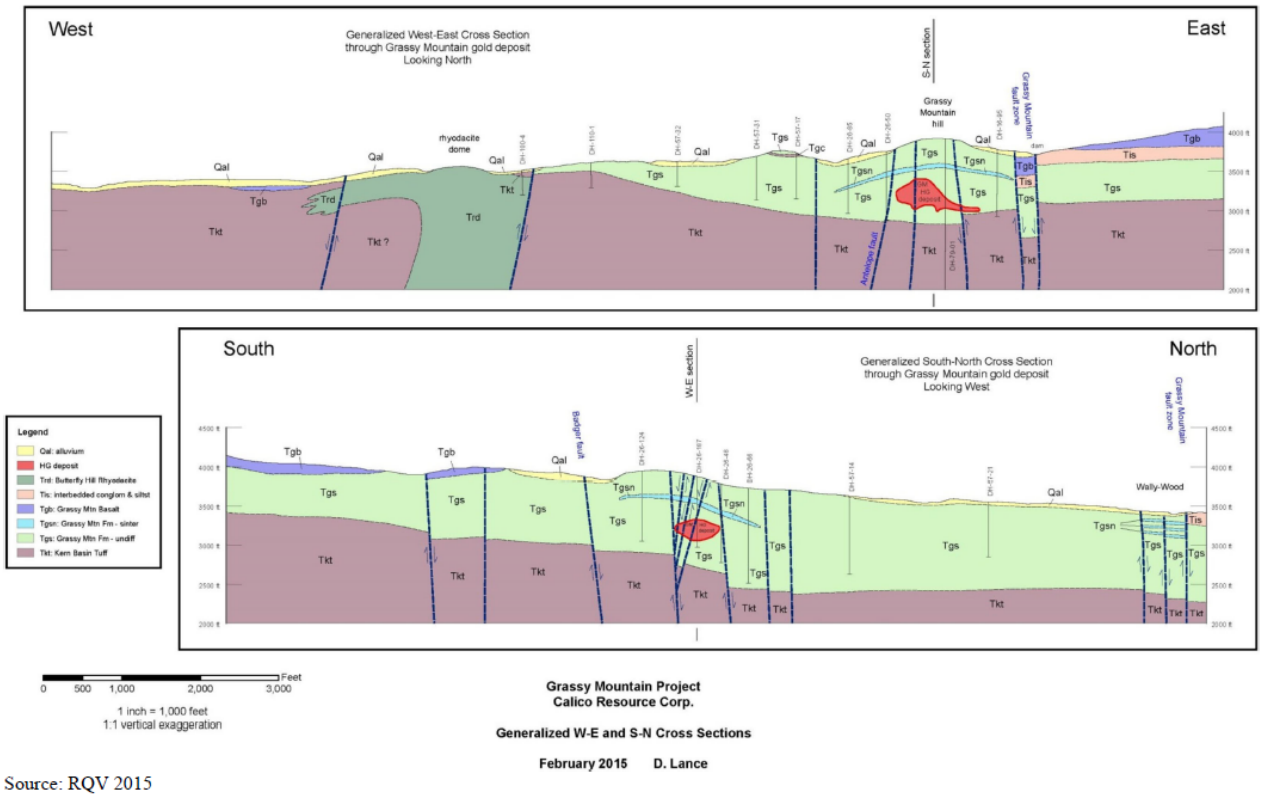


Figure 5. Mine and Process Area Geology

Bedrock outcrops near the Mine and Process Area are typically composed of olivine-rich basalt and siltstones, sandstones, and conglomerates of the late Miocene Grassy Mountain Formation (Tgb, Tgsn, and Tgs). These rocks are locally covered with relatively thin, unconsolidated alluvial and colluvial deposits (Qal). Erosion-resistant basalts cap local topographic highs. Arkosic sandstones have been encountered at the surface and at depth but have not been correlated across the vicinity of the Mine and Process Area, in part due to lateral discontinuity associated with sedimentary facies changes and structural offset.

Figure 6 *shows two generalized geologic cross sections through the Mine and Process area; west to east and south to north* (the original Figure 7 in Abrams did not include the cross-section lines; these have been added to Figure 5 above as depicted on Figure 5-2 in Red Quill Ventures 2015).



Source: RQV 2015

Figure 6. Geologic Cross Sections

The basal unit below the Grassy Mountain Formation is the Kern Basin Tuff (Tkt); a nonwelded, pumiceous, crystal tuff that displays cross beds and local surge structures. Clast size, thickness of individual ash units, and bedding structures suggest a source in the Grassy Mountain area. The Kern Basin Tuff ranges in thickness from 300 feet on the south bluffs of Grassy Mountain, to 1,500 feet in a drill hole beneath the Mine and Process Area.

The Kern Basin Tuff is overlain by a series of fluvial sediments. Most of the sedimentary units in and near the Mine and Process Area are silicified and strongly indurated. These sedimentary units include granitic clast conglomerate, arkosic sandstone, fine grained sandstone, siltstone, and siltstone/mudstone. The sedimentary facies of the Grassy Mountain Formation range from 300 to over 1,000 feet thick and provide the host rocks of the Grassy Mountain mineral resource.

Several siliceous terraces are interbedded with the silicified sediments of the Grassy Mountain Formation. Terrace construction was apparently episodic and intermittently inundated by fluvial sediments, resulting in an interbedded sequence of siltstone, sandstone, conglomerate, and sinter terrace deposits. Load casts, flame textures, convolute lamination and other soft-sediment deformation textures are common in both the sinter beds and sedimentary facies. The amount and size of the sinter clasts in the sedimentary rocks reflect relative proximity to a terrace. Proximal deposits are angular, inhomogeneous, clast-supported breccias of sandstone, siltstone, and sinter with indistinct clast boundaries in a sulfidic mud-textured matrix.

3.2.2 Ore Deposit Geology, Mineralization, and Alteration

The Grassy Mountain gold-silver deposit is located beneath a prominent, 150-foot high, silicified and iron-stained hill. Bedding is horizontal at the hilltop, and dips at ten to 25 degrees to the north-northeast on the northern and eastern flanks of the hill. The bedding dip steepens to 30 to 40 degrees on the west side of the hill due to drag folding in the footwall of the 20 degrees west of north (N20°W), striking Antelope Fault. A small area on the southwest slope of the deposit hill is covered by silicified arkose landslide debris.

The Grassy Mountain gold-silver deposit is located within an interpreted horst block that has been raised 50 to 200 feet in a region of complex block faulting and rotation. Faults at the Grassy Mountain deposit are mainly post-mineral 30 degrees west of north (N30°W) to ten degrees east of north (N10°E), striking normal faults developed during basin and range extension. On the northeast side of the deposit, these faults progressively downdrop mineralization beneath post-mineral cover. These offsets are suggested by interpreted offsets of a prominent white sinter bed in drill holes, as well as drill intersections with fault gouge.

The surface expression of the Grassy Mountain gold-silver system is indicated by weak to moderately strong silicification and iron staining with scattered one-eighth inch to one inch wide creamy to light gray chalcedonic veinlets. Approximate dimensions of the Grassy Mountain deposit at depth are 1,600 feet long by 1,000 feet wide by 600 feet thick. The deposit has a general 70 degrees east of north (N70°E) elongation and an approximate 15-degree bedding plane dip in a northerly direction due to faulting and associated fault block rotation.

There is an envelope of lower grade mineralization at depths of 200 to 800 feet that contains a higher-grade zone of mineralization between 500 and 750 feet below the surface. The well-defined base of higher grade mineralization from approximately 700 to 750 feet in depth suggests a strong pressure-temperature control on gold deposition. This pressure-temperature control likely indicates a boiling horizon in the hydrothermal system that acted as a controlling mechanism on gold deposition.

Silicification in the form of sinters and disseminated quartz is a prominent alteration type at Grassy Mountain and is largely controlled by hot-spring vents. Silicification occurs both pervasively as silica flooding, and as cross-cutting veins and stockworks. The silicified envelope has plan dimensions up to 3,000 feet (north-south) by 2,500 feet (east-west). Silicification is surrounded by widespread, barren, clay-rich (20- to 40-percent montmorillonite), tuffaceous siltstone and arkose with minor disseminated pyrite. Many of the sinters occur as sheets instead of mounds, which suggest that they are related to vents along faults rather than point sources.

Mineralization of the Grassy Mountain deposit includes: low grade gold associated with hot springs silicification; high grade gold associated with multi-stage quartz-adularia-gold-silver veins and stockworks; and late remobilization within sub-vertical rubble zones defined by clay matrix breccias. The deposit is characterized by stacked sinter terraces capping acid-leached sediments and multiple generations of quartz veins, which suggest repeated eruption, brecciation, breeching, and sealing of the hydrothermal system.

3.2.3 Structural Geology

At a local scale and within the immediate vicinity of the Grassy Mountain gold deposit, fault orientations can be grouped into two major sets: 20 degrees west of north to ten degrees east of north (N20°W to N10°E) striking faults, and 70 degrees east of north (N70°E) striking faults. These structures will have the greatest impact on underground conditions within the mining environment.

As depicted on the cross sections (Figure 6), faulted offsets are generally less than 40 to 50 feet. Maximum offsets of up to 200 feet occur along the N20°W striking Grassy Mountain fault zone.

4 HYDROGEOLOGIC FRAMEWORK

4.1 Introduction

The discussion below summarizes the hydrogeologic framework for vicinity aquifer conditions, groundwater elevation (potentiometric surface), hydraulic gradients (horizontal and vertical), and the potential influence of faults and structural controls on groundwater occurrence and flow.

The current understanding of groundwater trends is based on the following sources of information, compiled during investigations conducted between the late 1980s and the present:

- Drillers' reports and accounts of water encountered during borehole drilling and production during well test pumping activities
- Direct measurement of groundwater levels over time in production and monitoring wells installed in the vicinity surrounding the proposed Grassy Mountain Mine
- Vibrating wire piezometers (VWPs) installed directly within the deposit (deposit area) as point measurement locations.
- Controlled-source audio-frequency magnetotelluric (CSAMT) data used to characterize differences in porosity, often controlled by silicification.

4.2 Baseline Groundwater Level and Flow Monitoring

4.2.1 Monitoring Well Network

The monitoring well network has been developed over the course of 30 years for the purpose of collecting groundwater baseline data for the Project. While mining plans have changed over time, the original wells and subsequent additions have created a flexible and comprehensive baseline monitoring platform. The network currently includes 32 wells and piezometers, ranging in depth from 25 feet to 950 feet. There are wells and piezometers located in the near vicinity of the proposed mine and extending downgradient by several miles. The monitoring well network is described in the approved Work Plan and summarized below.

The first wells were constructed in support of baseline environmental studies conducted by Atlas Precious Metals, Inc. (Atlas). Western Technologies, Inc. oversaw the installation of three monitoring wells (GW-1, GW-2, and GW-3) and one production well (Prod-1) on the site in 1988.

The piezometers (26-092-915, 57-1, 57-10, 89-2) were installed in exploratory drill holes by Atlas, presumably shortly after drilling the holes in 1988 and 1989.

In 1989 and 1990, Steffen Robertson and Kirsten Consulting, Inc. oversaw the installation of monitoring well GW-4 and the production wells (PW-1 and PW-4). In 1991, J.M. Montgomery Consulting Engineers, Inc. (JMM) oversaw construction of three monitoring wells (GW-3A, GW-5, and GW-6) and one piezometer (GW-3B).

In 1993, twelve (12) new test and monitoring wells were installed, with work documented by Hydro-Geo Consultants, Inc. These were 59760, 59761, 59762, 59763, 59764, 59765, 59766, 59767, 59768, 59769, 59770, 59772.

The most recent monitoring wells (GMW17-31, GMW17-32, GMW17-33, and GMW18-34 were constructed in 2017 and 2018 to provide groundwater monitoring locations upgradient and downgradient of the deposit area. The locations of these new wells were selected based on their proximity to the mine in both up and down gradient areas. Wells GMW17-32 and GMW17-33 are deep/shallow well pairs constructed in close proximity to evaluate vertical

gradients, hydraulic connectivity, aquifer static water levels, and groundwater quality. Well GMW17-33 was constructed as a shallow pairing with the pre-existing well 59762. Well GMW18-34 is a deep upgradient well where water was not detected during drilling, so a shallow companion well was not completed. The work plan for the Grassy Mountain monitoring wells was approved by DOGAMI by letter dated January 6, 2017. A work plan adjustment eliminating the shallow well pair for GMW18-34 was approved by DOGAMI by letter dated May 31, 2018.

Two wells are included in the monitoring well network that were not constructed as monitoring wells. These are the Bishop stockwater well (drilled in 1963) and the BLM stockwater well (drilled in 1972).

A list of wells, locations, construction details, measurement protocols, water level data, and hydrographs are presented in the groundwater baseline report (SPF, 2019). Well construction details are summarized in Table 2. The location of all the monitoring wells is shown on Figure 7

4.2.2 Shallow Monitoring Well Water Levels

Quarterly groundwater level measurements have been collected manually from eighteen (18) monitoring wells between the 1st Quarter of 2013 and the 3rd Quarter of 2018, with the exception of the 1st and 2nd Quarters of 2015[1]. During the 2nd and 3rd Quarters of 2014, another five (5) monitoring wells were added to the program[2]. Once completed, the new monitoring wells GMW17-31, GMW17-32, GMW17-33, and GMW18-34 were included in the quarterly water level monitoring, in accordance with the Final Work Plan for Grassy Mountain Monitoring Wells (SPF, 2016b). More details on the new monitoring wells are provided in the well completion reports for GMW17-31, GMW17-32, GMW17-33, and GMW18-34 (SPF, 2018a, SPF, 2108b). Continuous water level data have been obtained from three wells using water level pressure transducers since the 1st Quarter of 2013.

Approximately half of the shallow monitoring wells (depth of less than 500 feet) show relatively stable water levels (i.e., typically within +/- one foot) during the monitoring period between 2013 and 2018 (Figure B1 in Appendix B). Of these wells, GW-5, GW-4, PW-4, 57-10, GW-2, and BLM remained stable with relatively flat or slightly upward trending water levels from 2013 through 2018 and minor fluctuations attributed to seasonal recharge. Wells 59770, 59763, 59764, GW-6, and 89-2 had a slight downward trend with minor recharge fluctuations.

Wells without stable trends exhibited fluctuations that appear to be responses to recharge from high-precipitation years, from pumping, or from drilling activities. All of the non-stable trend hydrographs are explained in more detail in the baseline characterization report (SPF, 2019). The non-stable trends that provide insight into aquifer characteristics are discussed below.

[1] Due to a change in ownership of the project, no monitoring occurred during these two quarters.
[2] These wells were identifed after a more thorough review of the historical record.

Table 2. Well Construction Table

Calico Well ID	OWRD Well Tag Number	OWRD Name	Alternate Name	Drill Method	Depth of First Water (ft)	Well Const. Depth (ft)	Screened Interval (ft)	Well Casing Diameter (in)	TOC Elevation[4]	Elevation Screened Interval (ft)	Water Level Elevation (9/26/2018)	Production (gpm)[2]	Screened Lithology[1]
59760	107462	MALH 2974	Middle Sweizer, TW-1	air rotary	160	203	163-203	6	3762.1	3599-3559	3673.43	+10	fractured basalt
59761	109400	MALH 2993	Lower Sweizer, MW-2	air rotary	100	118	97-117	4	3762.2	3665-3645	3673.48	+50	fractured basalt
59762	109371	MALH 2976, 2985	MW-3	air rotary	626	700	550-660	4	3724.8	3175-3065	3103.4	<1	siltstone
59763	109356	MALH 2994	TW-4	air rotary	277	323	293-323	6	3519.4	3226-3196	3239.03	+5	fractured volcanics
59764	107466	MALH 2986	MW-5	air rotary	270	300	279-299	4	3511.9	3233-3213	3238.24	+10	fractured sandstone
59765		MALH 2979	MW-6	air rotary	29	36	28-36	4	3446.5	3418-3410	dry	dry	shallow sandstone
59766	107468	MALH 2980	MWS-8	air rotary	only damp when drilled	45	25-45	4	3459.7	3435-3415	3426.68	+10	shallow sandstone
59767		MALH 2995	MWS-9	air rotary	dry	40	20-40	4	3495.3	3475-3455	dry	dry	shallow sandstone
59768		MALH 54197	MWS-10	air rotary	21	25	10-25	4	3480.6	3471-3456	3463.46	0.5	shallow sandstone
59770		MALH 2983	MW-11	air rotary	dry when drilled	424	374-424	4	3389.0	3015-2965	3241.71	+0.5	volcanic tuff
59772	109352	MALH 2984	Upper Sweizer, MWS-13	air rotary	125	207	165-205	4	3768.2	3603-3563	3673.5	+50	fractured basalt
26-092-915	109354	MALH 54071		unknown	unknown	915	228-268	2	3710.0	3482-3442	3633.55	unk	unk
57-1		MALH 54195		unknown	unknown	765	108-138	1.25	3770.6	3663-3633	3699.1	unk	unk
57-10		MALH 54196		unknown	unknown	500	126-156	1	3681.1	3555-3525	3635.67	unk	unk
89-2	109360	MALH 54072		unknown	200	425	386-406	2	3293.5	2907-2887	3235.54	unk	unk
Bishop	None	MALH 54046	Rye Field	cable	unknown	482	135-145	12	3391.5	3257-3247	3281	50	coarse gravel
BLM	109398	MALH 2277	Owyhee Ridge	cable	unknown	175	159-166	6	3579.6	3421-3414	3423.95	+12	white sand
GMW17-31	125168	MALH 54404		air rotary	dry when drilled	498	458-498	5	3722.0	3262-3222	3222.6	0	siltstone, sinter, clay
GMW17-32	125169	MALH 54405		air rotary	244	718	678-718	5	3702.1	3026-2986	3082.1	<1	Arkose, siltstone, Clay
GMW17-33	125170	MALH 54406		air rotary	243	338	238-338	5	3702.7	3465-3365	3452.16	<30	sinter, siltstone, tuff
GMW18-34	130031	MALH 54437		air rotary	dry	950	830-890	5	3953.3	3127-3067	dry	dry	Arkose, siltstone, Clay
GW-1	107469	MALH 2281	47-1	air rotary	140	155.5	135.5-155.5	4	3709.1	3573.5-3553.5	3654.18	60	gravel
GW-2	109357	MALH 2279	47-2	air rotary	dry when drilled	325	290-320	4	3827.5	3537-3507	3662.91	0	blue and grey clay
GW-3	107467	MALH 2278	47-3	air rotary	dry when drilled	350	320-350	4	3633.6	3314-3284	3401.68	<1	blue and grey clay
GW-3A		MALH 2579		air rotary	dry	420	380-420	2	3655	3275-3235	dry	dry	silt and clay
GW-3B		MALH 2576		air rotary	dry	340	80-100	2	3626	3546-3526	dry	dry	clay
GW-4	107460	MALH 54073		unknown	50	370	280-350	4	3342.7	3063-2993	3260.85	100	sandstone, congl, clay
GW-5		MALH 54194		air rotary	unknown	265	204-224	2	3413.0	3209-3189	3221.45	<1	tuff, clay
GW-6	109368	MALH 2578		air rotary	145	340	300-340	2	3377.3	3077-3037	3236.16	3-4	sandstone, congl, clay
Prod 1	107457	MALH 2275, 2511		air rotary	145	425	145-255, 325-355, 380-420	6	3436.4	3291-3181, 3111-3081, 3056-3016	3436.41	30-100[3]	sandstone, blue clay, and hard sandstone
PW-1	109353	MALH 2276		air rotary	320	520	320-340, 400-420	6	3709.1	3389-3369, 3309-3289	3654.66	25-35[3]	brown clay and sand; coarse sandstone
PW-4	109351	MALH 2206		air rotary	280	375	280-300, 340-360	6	3341.4	3061-3041, 3001-2981	3261.39	175-250[3]	sandstone and conglomerate

1 - as reported on the drillers log
2 - based on short-term testing by driller during or following construction
3 - based on long-term test pumping
4 - surveyed with the exception of GW-3A, GW-3, GMW-17-31, GMW17-32, GMW17-33, and GMW18-34

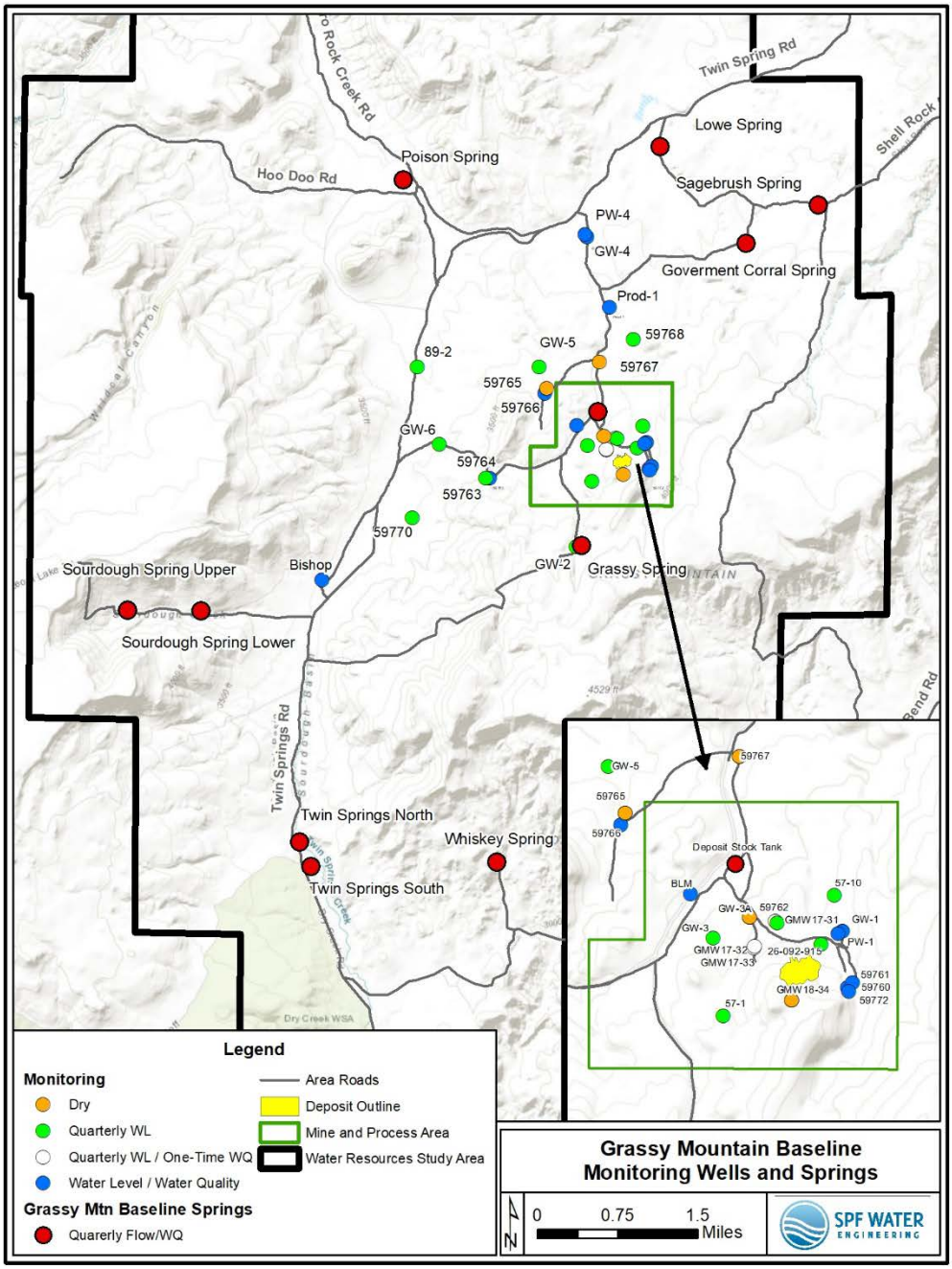


Figure 7. Grassy Mountain baseline monitoring wells and springs

4.2.2.1 GW-3 and GMW17-33

Monitoring well GW-3 water levels show possible influence from the drilling and pumping of the new monitoring wells. GW-3 is the closest monitoring well to the new monitoring wells drilled in 2017 and 2018, and has a relatively deeper completion interval than the rest of the historical monitoring wells drilled near the deposit area (screened interval from a depth of 320 to 350 feet [3314-3284 ft msl]). Monitoring well GW-3 had a stable to very slowly rising water level from the start of monitoring in 2013 until the 3rd Quarter of 2017 (Figure 8). Between the hand measurements on 09/26/2017 and 11/29/2017, the water level began declining, with approximately 5 feet of decline in one year. The start of this 5-foot decline coincided with the drilling of GMW17-33 (screened from 238 feet to 338 feet [3465-3365 ft msl]), during which the driller noted first hitting water on 11/17/2017, but before test pumping of any of the new wells.

On 11/29/2017 a transducer was installed in GW-3 for monitoring the water level during pumping tests of wells 59762, GMW17-32, and GMW17-33. Between 11/29/2017 and 12/28/2017 (transducer removal) the transducer recorded a drawdown of only 0.39 feet, with no drawdown or recovery trends apparent from any of the aquifer tests. With no significant drawdown in GW-3 apparent from the testing of GMW17-33 (average flow rate of 25.8 gpm for 97 hours between 12/14/2017 and 12/18/2017) prior to the transducer being pulled on 12/28/2017, it is theorized that the initial drop in water level first detected on 11/29/2017 may have been caused by delayed effects from the drilling of GMW17-32. This well was first drilled to approximately 1,000 feet by early September 2017. Water was first encountered on 8/25/2018 at a depth of 235 feet. Due to problems with hole instability, the well was re-drilled to 900 feet and the well was constructed by the end of October 2017.

Up through the most recent quarterly monitoring (3rd quarter 2018), both GW-3 and GMW17-33 show an average decline of approximately 1.25 feet per quarter and 2.5 feet per quarter, respectively, with both wells drawing down approximately 2.5 feet in the last quarter alone (Figure 9). The delayed drawdown in GW-3 may be a response to the drilling of GMW17-32, whereby the shallow aquifer zone drained into a deeper zone. GMW17-32 was ultimately constructed with 8-inch casing sealed to 656 feet (3046 ft msl), so the shallow aquifer zone can no longer drain into the deeper zone. The drawdown seen in GW-3 may also be a delayed response to test pumping of GMW17-33. The drawdown response indicates an aquifer with very low values of hydraulic conductivity and possible compartmentalization from the faults functioning as lesser permeable boundaries.

The observed drawdown in GMW17-33 through the 3rd Quarter of 2018 is likely not a response to test pumping. No shallow wells have been test pumped during the period of record. The deep wells that were test pumped have much deeper completions and were test pumped at very low pumping rates. It is possible that the initial static water level in the well was artificially high due to water used for drilling the well, although only a minor amount was needed. The well could still be equilibrating towards a "true" static water level. Another possibility is that there is a general decline in the shallow aquifer zone in the vicinity of the proposed Grassy Mountain Mine. Water level declines are noted in piezometer 26-092-915 and wells 59760,

59761, and 59772 located near the deposit area. Inadequately sealed boreholes at or near the deposit area may be the cause of shallow aquifer zones draining to deeper zones.

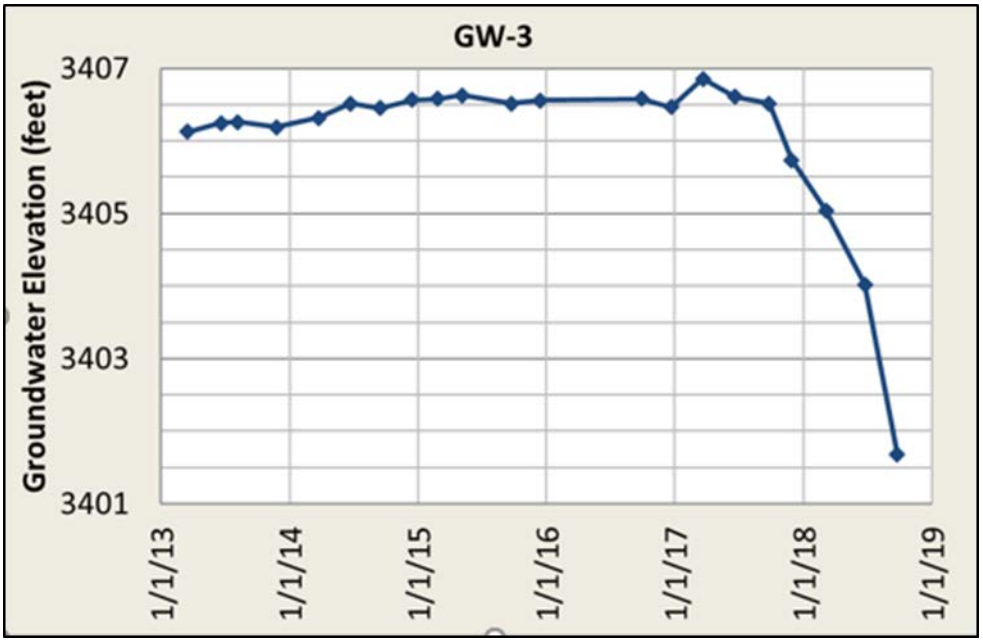


Figure 8. Groundwater hydrograph for monitoring well GW-3

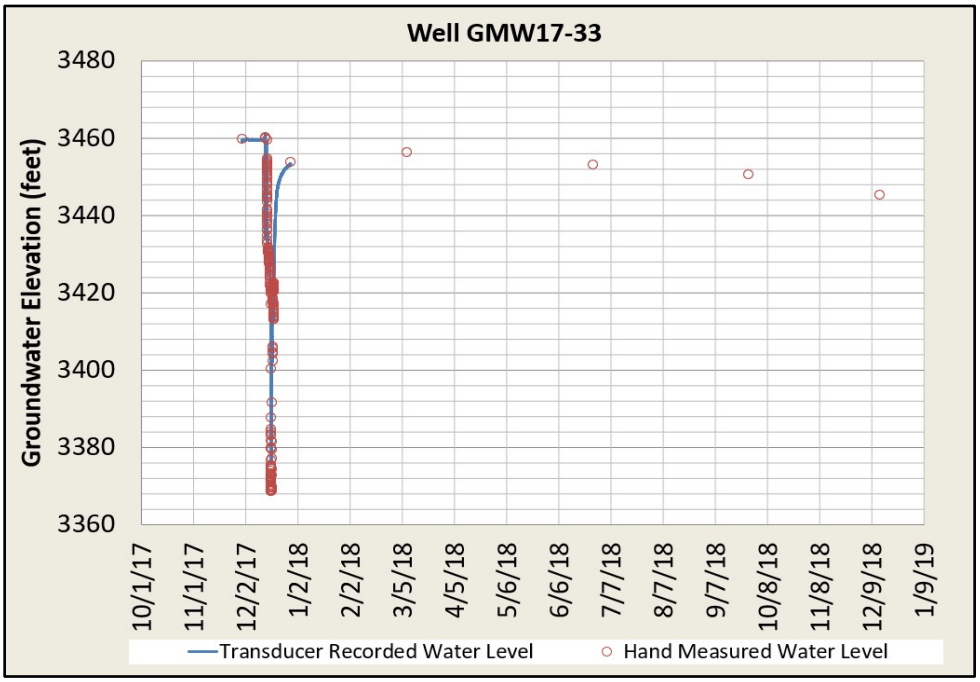


Figure 9. Groundwater hydrograph for well GMW17-33

4.2.2.2 GW-1, PW-1, and 26-092-915

Wells GW-1 and PW-1 seem to have a flat or slightly rising water level trend, which only varied during the 2016-17 pumping of PW-1 to support resource and reserve drilling activities (i.e., well construction water supply). PW-1 was used for drill water at various times between September 29, 2016, and March 22, 2017. The pumping rate and duration are not known, but the well is believed to be equipped with a pump capable of producing 20 to 30 gpm. The December 2016 monitoring event found that groundwater levels in wells GW-1 and PW-1 had declined by approximately 4 feet and 7 feet, respectively, from previous measurements. Water levels eventually rebounded to previous trends (Figure 10). The decline and rebound effects are attributed to intermittent pumping in PW-1.

The clear hydraulic response in well GW-1, screened in gravel deposits from approximately 135 feet to 155 feet bgs, suggest a hydraulic connection exists based on pumping in nearby well PW-1. PW-1 was reportedly screened within a deeper portion of the aquifer, from 320 feet to 340 feet (3389-3369 ft msl) in unconsolidated clay and sand deposits and from 400 feet to 420 (3309-3289 ft msl) feet in sandstone. The water well report for PW-1 indicates a seal from 320 feet to surface. Wells GW-1 and PW-1 are approximately 100 feet apart. It seems unlikely that the shallow aquifer tapped by GW-1 would be affected to the observed extent by pumping PW-1 given the layers of gravel and clay (13 feet), clay and sand (17 feet), basalt (125 feet), and brown clay (8 feet) existing between the two aquifer zones.

It is possible that PW-1 or other wells in the area are not adequately sealed allowing groundwater to flow from the upper to the lower aquifer zones. Another possibility is that faulting in this area functions as a conduit for groundwater flow. Like most of the monitoring wells in the area, the wells are located next to multiple faults, but unlike most of the monitoring wells, these wells are located (as indicated by the CSAMT survey) in an area that is less affected by silicification. Even with this possibility, the recovery period is still more four times longer than the pumping period (Figure 11) indicating lower transmissivity or negative hydraulic boundaries at some distance from the well.

26-092-915 is located approximately 500 feet from PW-1 and is screened at a depth of 228 to 268 feet (3482-3442 ft msl) (Figure 7). There was no observed drawdown in 26-092-915 during the period of intermittent pumping between 2016 and 2017 (Figure 12). Water levels steadily decline (~2.5 feet) from 2013 to the beginning of 2017 most likely associated with dry conditions. Water levels then increase 3 feet between 2017 and mid-2018 after increased precipitation in 2017. To evaluate the expected drawdown at 26-092-915 from pumping at PW-1 the Theis method was used assuming a pumping rate between 20 and 30 GPM at PW-1, a transmissivity of 250 gpd/ft, and a storativity of 10^{-5}. Under conditions where the wells were connected to the same water producing unit, the predicted drawdown at 26-092-915 would be approximately 40 feet after one day of continuous pumping. The aquifer properties used are based on results from historical pumping test discussed further in section 4.8.1. A

possible explanation lack of drawdown at 26-092-975 is the faults that run between PW-1 and 26-092-915 acting as a barrier to flow. The effect of faults on groundwater flow is discussed further in section 4.7.

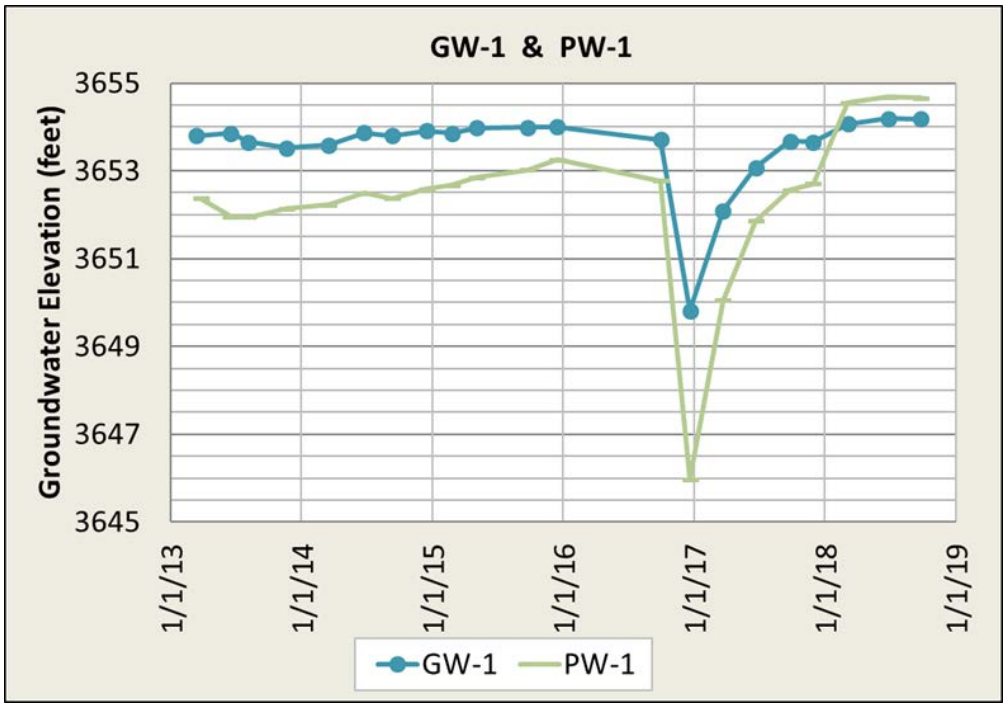


Figure 10. Groundwater hydrograph for wells GW-1 and PW-1

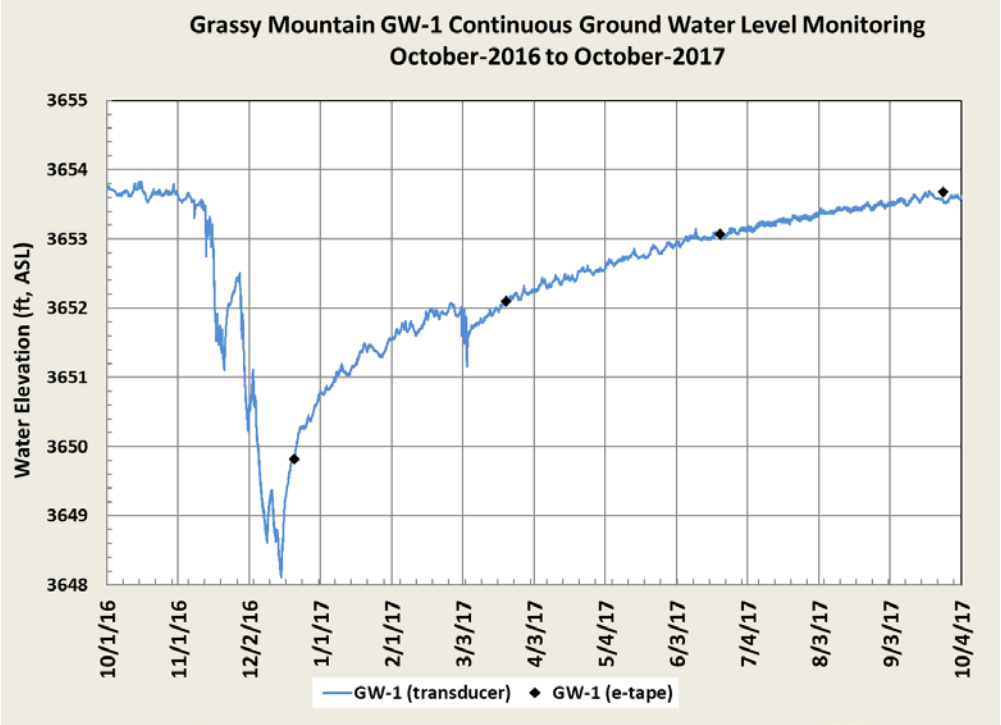


Figure 11. GW-1 transducer recorded water level during PW-1 pumping and recovery period

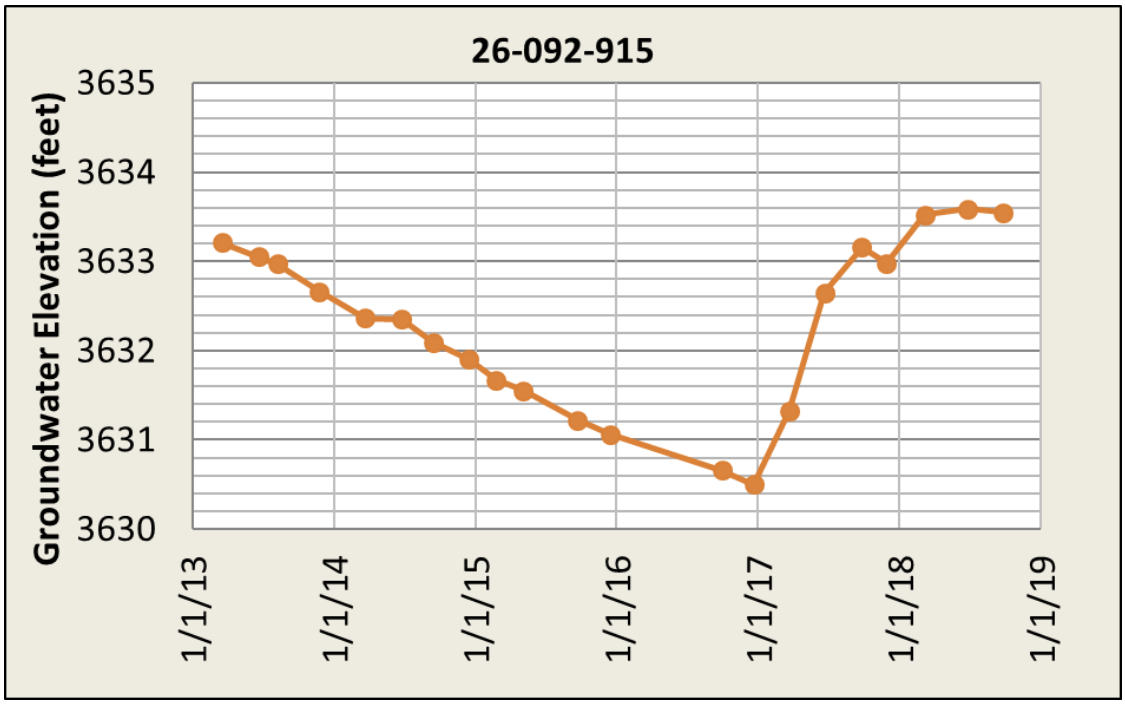


Figure 12. Groundwater Hydrograph for well 26-092-915

4.2.3 Deep Monitoring Well Water Levels

4.2.3.1 59762 and GMW17-32

Water levels have been monitored in Well 59762 since 2013. This well is screened from a depth of 537.5 feet to 657.5 feet (3175-3065 ft msl). Groundwater levels in monitoring well 59762 have shown a gradual decline of approximately 2 feet over five years, refer to Figure 13. The water level was 619.65 feet below measurement point (bmp) (3105 ft msl) on 3/18/2013 and was measured at 621.39 feet bmp (3103.4 ft msl) on 9/26/18. The driller's log reported a static water level of 626 feet on October 29, 1993.

It is possible that the observed decline is a result of slow leakage from the well screened interval downward due to vertical gradient. Another possible explanation is evaporation from the well exceeding infiltration.

The hydrograph showing water levels measured in GMW17-32 shows the results of test pumping and recovery; see Figure 14. The well was test pumped on December 11, 2017, with a starting static water level of 648.33 feet bmp (3054 ft msl) and an ending pumping water level of 717.70 feet bmp (2984 ft msl). The test is described in more detail in Section 4.8.2.2. Figure 14 shows that the water level in GMW17-32 appears to have completely recovered to a depth of approximately 620 feet bmp (3082 ft msl) by 6/26/2018; the water level measured on 9/26/2018 was very similar. Therefore, the water level in this well appears to have taken up to 200 days to completely recover from the test pumping, suggesting very low aquifer hydraulic conductivity.

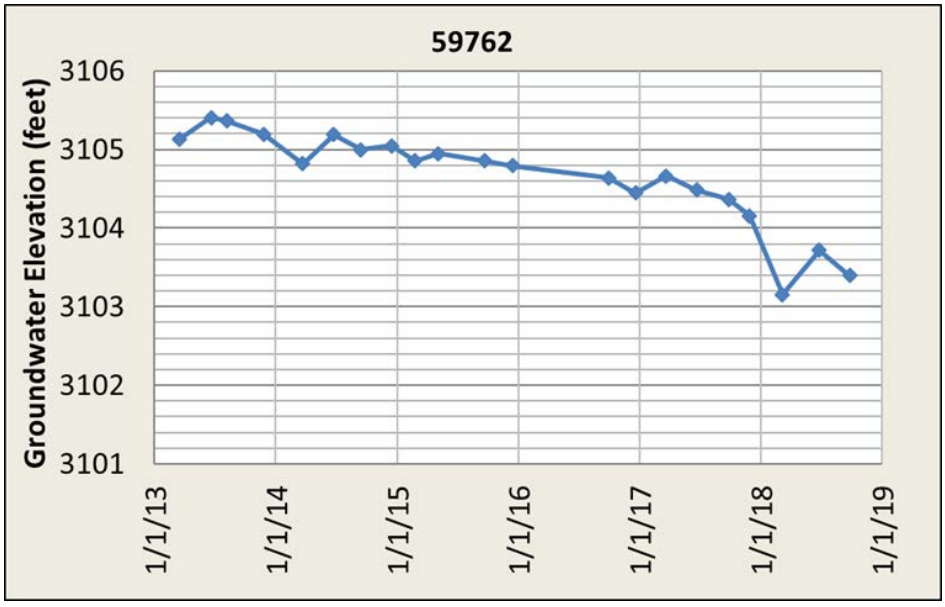


Figure 13. Groundwater hydrograph for 59762

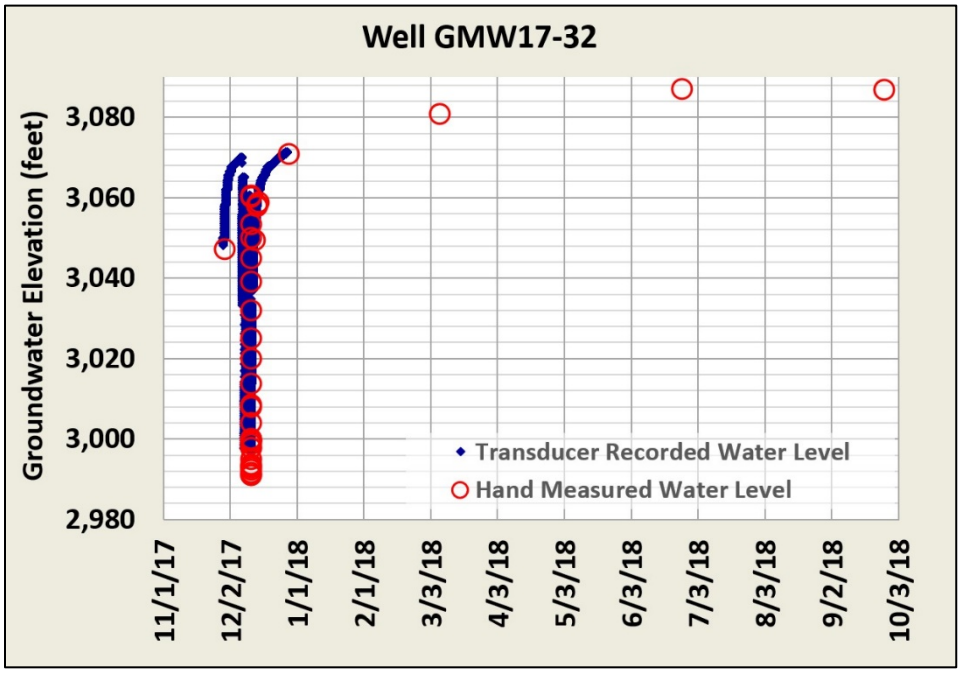


Figure 14. Groundwater hydrograph for GMW17-32

4.2.4 Vibrating Wire Piezometer Water Levels

A total of 15 VWPs were installed in five boreholes during the 2017 Calico mineral resource and reserve program to collect water level data within the deposit area. VWPs were installed predominantly on the eastern side of deposit area at shallow, intermediate, and deep intervals, intended to bracket the reserve ore body (SPF, 2017b). VWP installation was done in accordance with approved standard operating procedures (SPF, 2017a).

Interpretation of the VWP pressure responses (supported by observations of the presence or absence of water during borehole advancement) indicates groundwater occurrence is discontinuous horizontally and vertically within the deposit area. Groundwater is interpreted to be present where positive pressure responses recorded by VWPs are within the sensor accuracy range, greater than approximately 0.4 pounds per square inch (psi). Groundwater is encountered at elevations above, within, and below the deposit area at four of the five borehole locations at various depths: GM17-16-I, GM17-16-D, GM17-20-I, GM17-20-D, GM17-21-I, and GM17-30-I. VWP locations are shown on Figure B-2 in Appendix B, along with individual hydrographs for the six VWPs that encountered groundwater.

Four of the five hydrographs show an abnormal decrease or fluctuations in aquifer pressure at the start of the monitoring period. This is attributed to the construction of the VWPs and residual pressure from the grouting of the bores. Once stabilized, the hydrographs for the VWPs indicate a decrease in aquifer pressure during the start of the monitoring (mid 2017) with a flattening out or slight increase of pressure during the start of 2018. Towards the end of the monitoring (late 2018), there was a continued increase (GM17-20-I and GM17-30-I),

flattening (GM17-16-I and GM17-16-D), and slight decrease (GM17-21-I and GM17-20-D) in aquifer pressures observed. After the initial stabilization of the VWPs, the aquifer pressure fluctuations varied by up to a foot, with no obvious change in water level associated with test pumping the new monitoring wells (GMW17-32, -33) or 59762.

4.2.5 Springs and Flowing Wells

Quarterly flow measurements have been collected from up to 11 baseline springs and one flowing well (Prod-1) between the 1st Quarter of 2013 and the 3rd Quarter of 2018, with the exception of the 1st and 2nd Quarters of 2015. There are sixteen (16) additional springs located within the Study Area that are identified as background springs in the Work Plan. Flow was measured from these background springs and two flowing wells on a twice-yearly basis in 2013, 2014, and 2015.

A list of springs, locations, measurement protocols, and flow data are presented in the groundwater baseline report (SPF, 2021). The location of all the baseline springs is shown on Figure 7.

Overall, flow rates have remained relatively stable over the monitored period, with the following noted exceptions:

- Seasonal influences are apparent at the Deposit Stock Tank location with higher measured flows during winter months (i.e., on the order of approximately 0.4 gpm to 0.6 gpm) and lower flows during summer months (i.e., 0.1 to 0.2 gpm range).
- The flow rate at Lowe Spring was observed to increase to approximately 0.4 gpm following the April 2015 monitoring event.
- Flows at locations including Twin Springs South and Tank East of Negro Rock showed variable rates over time.
- Slightly declining flow rates have been observed at Prod-1, between approximately 0.5 and 1.5 gpm.

The combined flow rates for all of the monitored locations is on the order of roughly 35 gpm to 45 gpm, accounting for temporal variability in the estimated flow rates.

4.3 Geology

4.3.1 Introduction

The aquifer system generally occurs within the Grassy Mountain Formation, described in Abrams (2018) as:

Arkosic sandstones and channel-fill granite clast conglomerates. Mainly white to tan arkosic sandstones. Includes Tgsc, channel fill conglomerates with abundant granite and rhyolite clasts in the upper part of the unit. Uppermost conglomerates locally contain rounded obsidian clasts and rare black chert clasts. Unit Tgs generally becomes finer grained upward and includes white bentonitic clays near the top of the section which, where overlain by unit Tgb often generated large landslide masses. Hot spring activity contemporaneous with the

deposition of the arkoses is indicated by sinter beds Tgsn, and sinter boulders containing silicified reeds and wood near the Grassy mountain gold deposit. Unit Tgs is the host for both the Grassy Mountain and Crabgrass gold deposits.

The Grassy Mountain Formation generally strikes from east to west and dips towards the north. The Grassy Mountain Formation is overlain by Grassy Mountain Basalt south and east of the proposed Grassy Mountain Mine and alluvium in the valley north of the proposed Grassy Mountain Mine. The Grassy Mountain Formation is regionally underlain by Kern Basin Tuff.

4.3.2 Monitoring Well Lithology

The monitoring well network describes the complex aquifer system with a southeast to northwest flow regime:

- To the northeast of the deposit area at PW-1 (refer to Figure 7 for location), the well log describes the water-bearing formation as brown clay and sand and coarse sandstone. The water-bearing zone is overlain by basalt and alluvium. The 2018 water level was 3655 feet msl.
- To the south and west of the deposit area at GW-2 and GW-3, thick beds of clay were encountered to the completed depth of 400 feet. No water was encountered during drilling of either well, but water eventually entered the well. Water levels in 2018 were 3663 and 3402 feet msl, respectively.
- Farther to the southwest of the proposed Grassy Mountain Mine at 59763, the driller encountered tuff and rhyolite to a depth of 324 feet, with no water noted during drilling. The tuff and rhyolite were screened, and water eventually entered the well. The 2018 water level was 3239 feet msl.
- To the west of the proposed Grassy Mountain Mine at GW-6, sand and clay with sandstone were encountered to 340 feet. The 2018 water level was 3236 feet msl.
- To the northwest of the proposed Grassy Mountain Mine at GW-5, tuff was encountered to a depth of 260 feet. The 2018 water level was 3221 feet msl.
- To the north of the proposed Grassy Mountain Mine at Prod-1, the water-bearing zone was sandstone with blue clay to a depth of 425 feet. The 2018 water level was 3436 feet msl.
- Farther to the north at PW-4, layers of clay and sandstone were encountered to a depth of 375 feet, with sandstone being the water-bearing formation. The 2018 water level was 3261 feet msl.

Groundwater typically has been reported in subsurface deposits consisting of unconsolidated or weakly consolidated sandstone and conglomerate units and in siltstone deposits that are interbedded with sandstone and the water levels observed in the wells above are generally representative of southeast to northwest flow. While in general the siltstones, sandstones, and conglomerates of the Grassy Mountain Formation are the water-bearing zones in the vicinity of the proposed Grassy Mountain Mine, these zones do not appear to be continuous across the area and create a heterogenous aquifer system where gradients vary significantly. A table of well completions and a well logs are provided in Appendix F. The following sections

will provide further depictions of how the complex geology around the Grassy Mountain mine and immediate deposit area impacts the flow of groundwater.

4.3.3 Geologic Cross-Sections

In addition to the monitoring wells, there has been an extensive exploratory drilling program in the area of the proposed Grassy Mountain Mine. Lithologic cross-sections (A through G) developed from the monitoring well network and exploratory drilling program using Strater[3] are included as Figure E1 in Appendix E. Minor interpretation connecting the lithology between the bores has been performed for a visual aid to show the possible interconnectivity of the water-bearing zones. Near the deposit area where most of the faulting and rotation occurs, it is likely the beds are dipping steeper than shown on the cross-sections. Encountered water, where noted by the drillers, is shown on the cross-sections. These cross-sections show the spatial variability in the water-bearing materials, and also the variability of encountered water, in the vicinity of the proposed Grassy Mountain Mine.

Cross-section G was created using only bores located near the deposit area with driller-reported water to help show the variability of the water levels and flows. There were multiple bores near this cross-section line that did not note that any water was encountered. Moving downgradient towards Prod-1, GW-4, and PW-4, where there is less faulting and rotation of the beds, there appear two to three coarser-grained zones with more consistent water availability.

Cross-sections H through K were developed to illustrate on a regional scale how geology is affecting the flow of groundwater. Cross-sections H through K only used monitoring well lithology and water level measurements. The potentiometric surface is discussed further in Section 4.6.

The water-bearing zones within the Grassy Mountain Formation are laterally discontinuous as a result of discontinuities due to faults, sedimentary facies changes, and silicification. The horizontal and vertical connectivity between these zones is also limited by, discontinuous interbedded layers of low-permeability clay, siltstone, and sinter. The discontinuities likely promote development of vertical gradients or localized shifts in horizontal gradient that are apparent on the groundwater potentiometric surface maps. This can also be seen in cross-sections I and J in Appendix E. While limited in spatial extent and hydraulic connectivity, the water-bearing zones share the same geological characteristics in that they occur within the Grassy Mountain Formation. In addition, some degree of connectivity is supported by water-level and water-quality data. Taken as a whole, these water-bearing zones are considered to be part of a single, heterogeneous and locally complex aquifer system.

4.3.4 Silicification

In and near the deposit area, most of the sedimentary units are silicified and strongly indurated (Abrams 2018). This silicification is noted in the exploratory drilling logs and the driller's logs

[3] Strater is a well log, bore hole, and cross sectional plotting software created by Golden Software, LLC

for wells near the deposit area (59762, GMW17-31, GMW17-32, GMW17-33, and GMW18-34).

In 2012, a CSAMT survey was conducted by Zonge Geosciences Inc. (Wright, 2012). The CSAMT survey lines were oriented N20°W and located across the area of known mineralization. A total of 18 inverted resistivity sections were developed from the survey data along with interpretive overlays. These sections were used to identify zones of high resistivity in the area of the main proposed Grassy Mountain Mine; the high resistivity is attributed to the highly silicified rocks that host the deposit.

A map of the CSAMT survey data is presented as Figure 15. The survey was completed at four different depth ranges: 0 to 164 feet, 164 to 328 feet, 328 to 656 feet, and 656 to 1,312 feet. Figure 15 generally, shows an increase in resistivity/silicification (white and light blue areas) with depth in the near vicinity of the mine. The area of silicification is centered on the main deposit, with an expanding zone to the north with depth. The darker red and purple areas on the map represent low resistivity/non-silicified sediments. On the 0 to 164 feet map, the white area on the east side is caused by surficial volcanics.

Figure 16 shows the geophysics from 656 to 1,312 feet, the monitoring wells screened in this depth interval, and the exploratory drill holes either completed in this depth interval (if dry) or that encountered water at these depths[4]. The drill holes that encountered water are identified on the map. In general, no water was encountered while drilling holes in the highly silicified area (white area on the map). Some water was encountered in the less resistive (less silicified) areas around the deposit area. The two monitoring wells completed at this depth, GMW17-32 and GMW18-34, encountered minor water and were dry, respectively.

Figure 17 shows the geophysics from 328 to 656 feet and the monitoring wells and drill holes completed at this depth interval. In general drill holes completed in the highly silicified deposit were dry; however, the majority of the drill holes were dry at this depth throughout the area. The drill holes that did encounter water are typically on the periphery of the highly silicified deposit. The monitoring wells completed at this depth in silicified zones are poor producers. PW-1, completed in non-silicified sediments is moderately productive.

Figure 18 shows the geophysics from 164 to 328 feet and the monitoring wells and drill holes completed in this depth interval. In general, the monitoring wells completed in moderately-silicified sediments (GMW17-33) and basalt (59760, 59772) produce at least 10 gpm on a short-term basis. The wells completed in more silicified materials typically produce less than 5 gpm. The drill holes that encountered water were often drilled into less silicified sediments, although some holes completed in silicified zones also encountered water.

Figure 19 shows the geophysics from 0 to 164 feet and the monitoring wells and drill holes completed in this depth interval. GW-1 and 59761, completed in non-silicified sediments and basalt respectively, produce in excess of 50 gpm on a short-term basis. Other monitoring wells completed in more resistive lithology were dry or poor producers. Drill holes generally encountered more water at this depth interval compared to the deeper intervals, with the

[4] The presence and amount of water from the exploratory drilling is based on historical drilling notes.

degree of silicification appearing to have less of an impact on the presence of water. However, most of these holes produced minor amounts of water during drilling.

While the intent of the CSAMT survey was for mineral exploration, the survey is also useful for locating areas of low porosity. From the survey, values of high resistivity can be correlated to low porosity. Porosity, which is a measure of the total pore space in a rock is generally indicative of a rocks ability to transmit water (i.e. permeability). In general, the silicification appears to have a negative effect on porosity and hydraulic conductivity as evidenced by wells and drill holes completed in the zone of silicification. Hydraulic conductivity increases moving away from the deposit area.

Cross-sections with approximate well locations and the CSAMT survey data are provided as Figure 20 and Figure 21. These diagrams help show the relationship between the silicification and water availability. A useful example of where variations in geophysical data indicate differing hydrologic conditions is at GMW17-32 and GMW17-33 (Figure 20). These are in close proximity to CSAMT Line 10. GMW17-33 is screened at a higher elevation than GMW17-32 where geophysical data indicates a higher porosity, while GMW17-32 is screened deeper in a zone of low porosity. Test pumping of GMW17-33 suggests a relatively isolated zone of higher porosity material that was dewatered during testing. Test pumping GMW17-32, however, confirms the presence of an aquifer with very low transmissivity. Pumping test for these wells is discussed further in section 4.8.

Another example of the geophysical data accurately representing geologic conditions is presented in Figure 21. This Figure provides a comparison of formation resistivity values and well lithology for GMW17-32 and GMW18-34 along CSAMT line 11. This example is representative of how lithology and silicification affect groundwater flow. Higher elevations at GMW18-34 indicated higher porosity for coarse-grained sediments and lower porosity for finer grained sediments. In GWM17-32, a large section of coarser grain sediments corresponds to an area of higher porosity. The geophysical data is also representative of hydrologic conditions as GMW18-34 is located in an area with an overall lower porosity and this well has been reported as dry since its completion. In contrast, GMW17-32 is located in an area of relatively higher porosity and water was reported after completion.

Of note is that water was encountered during drilling of GMW17-32 at a depth of 235 feet in an area of apparent higher porosity. The highly silicified areas do not appear to be water-bearing. Using the information gained from these cross-sections, maps, and drilling of GMW18-34, it is apparent the large section of the silicified formation upgradient and encompassing the deposit area is an impediment to groundwater flow through the proposed Grassy Mountain Mine.

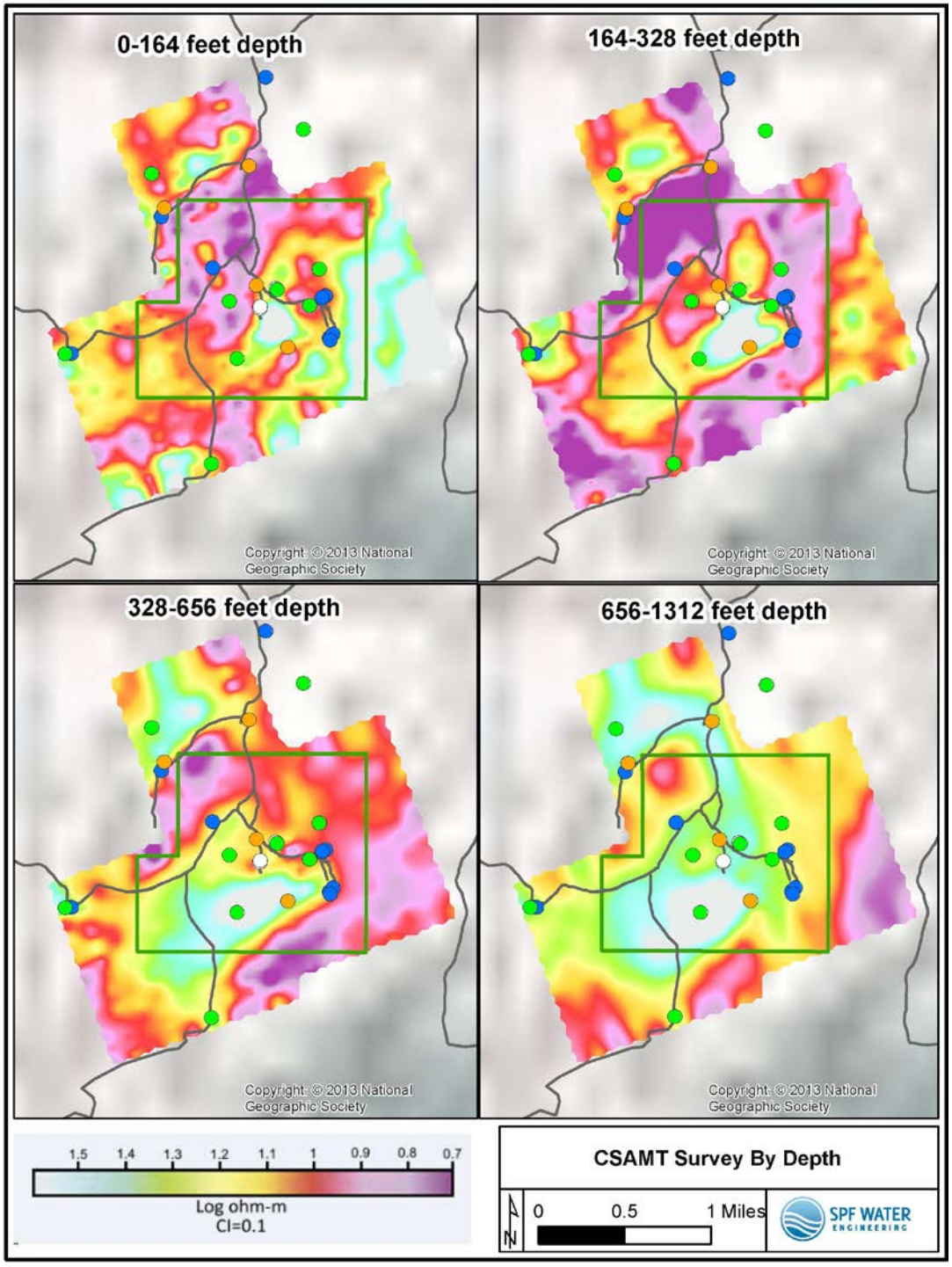


Figure 15. CSAMT survey data by depth

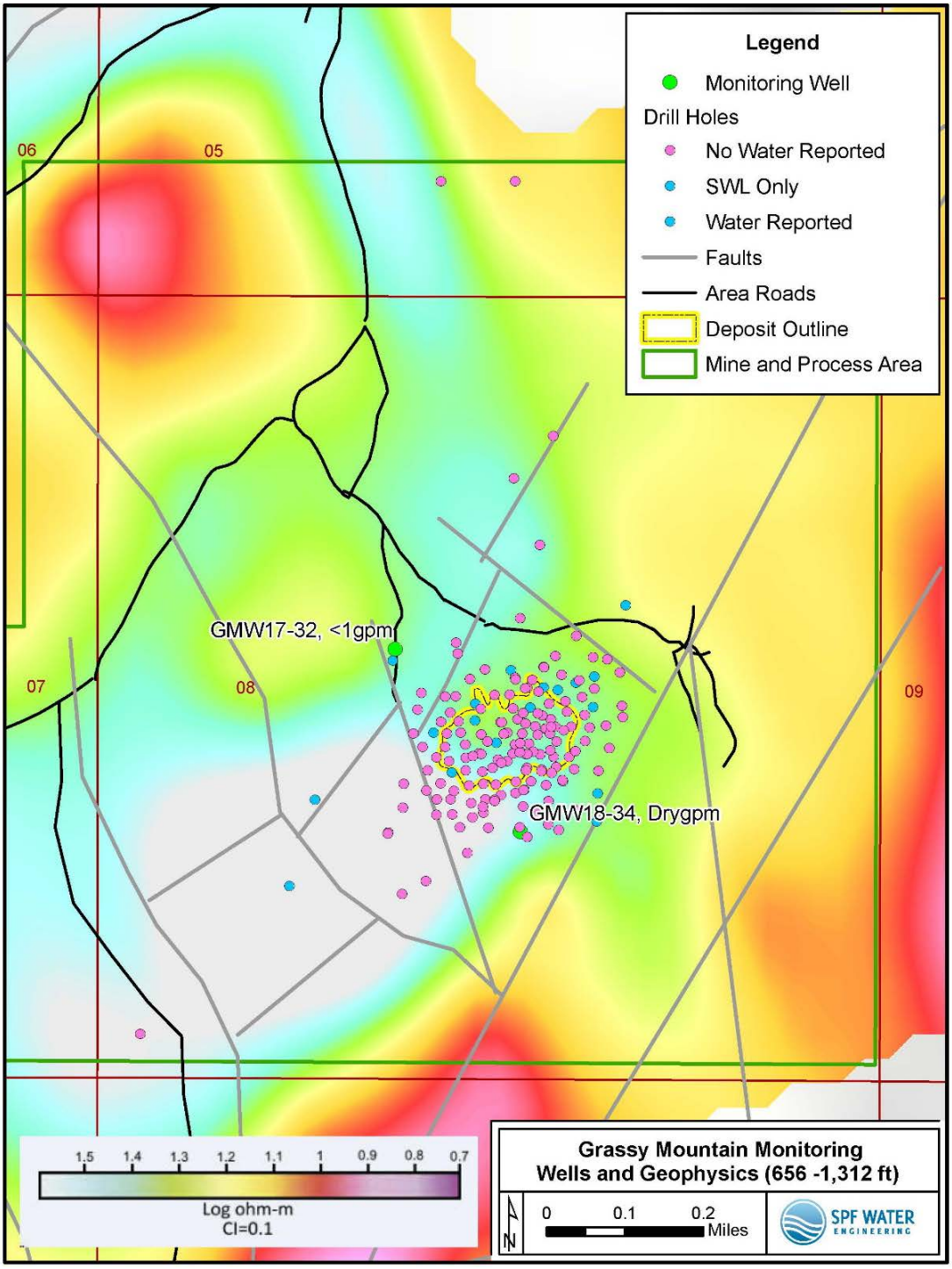


Figure 16. Monitoring wells, drill holes, and geophysics (656-1,312 ft)

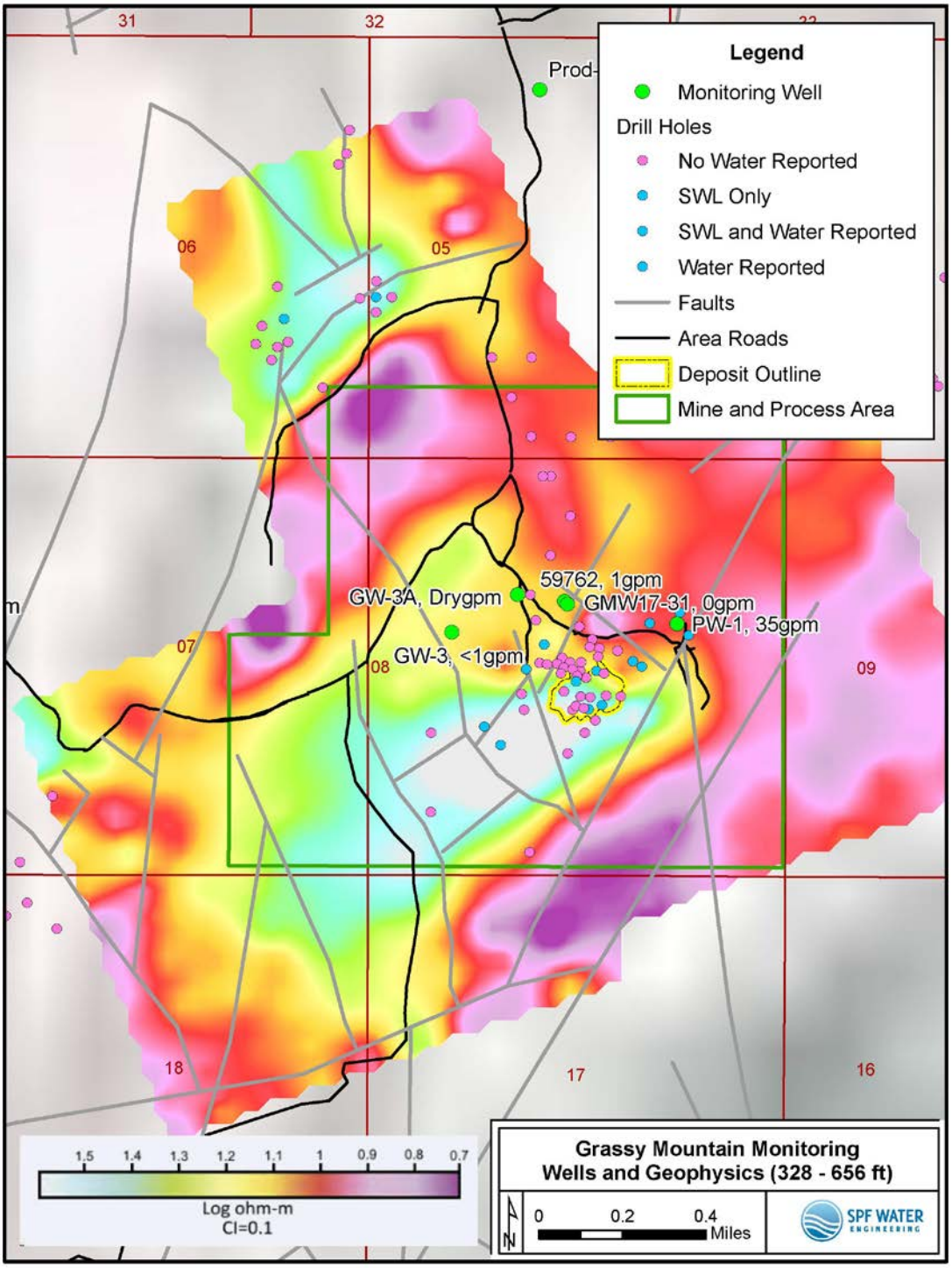


Figure 17. Monitoring wells, drill holes, and geophysics (328-656 m)

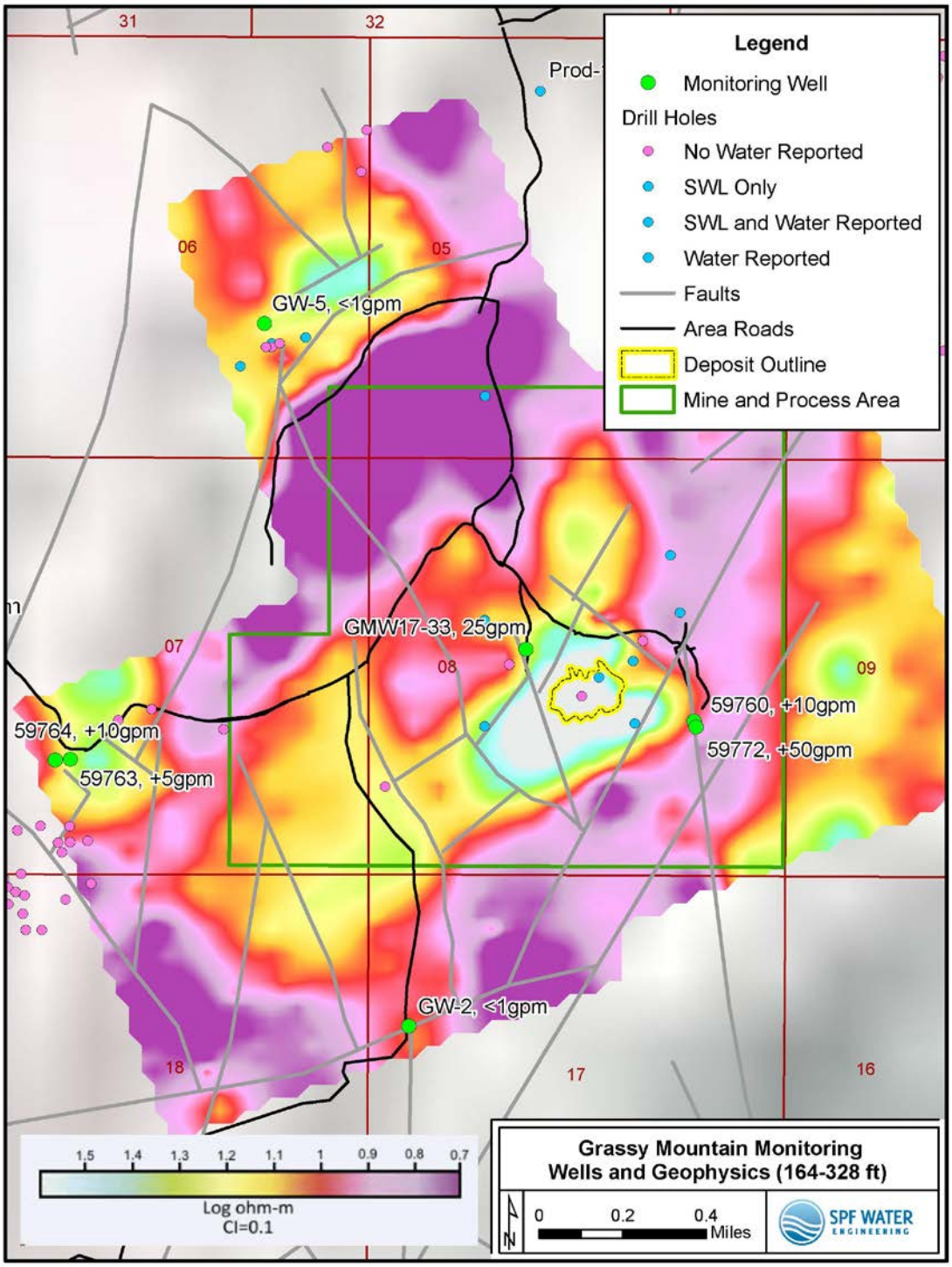


Figure 18. Monitoring wells, drill holes, and geophysics (164-328 ft)

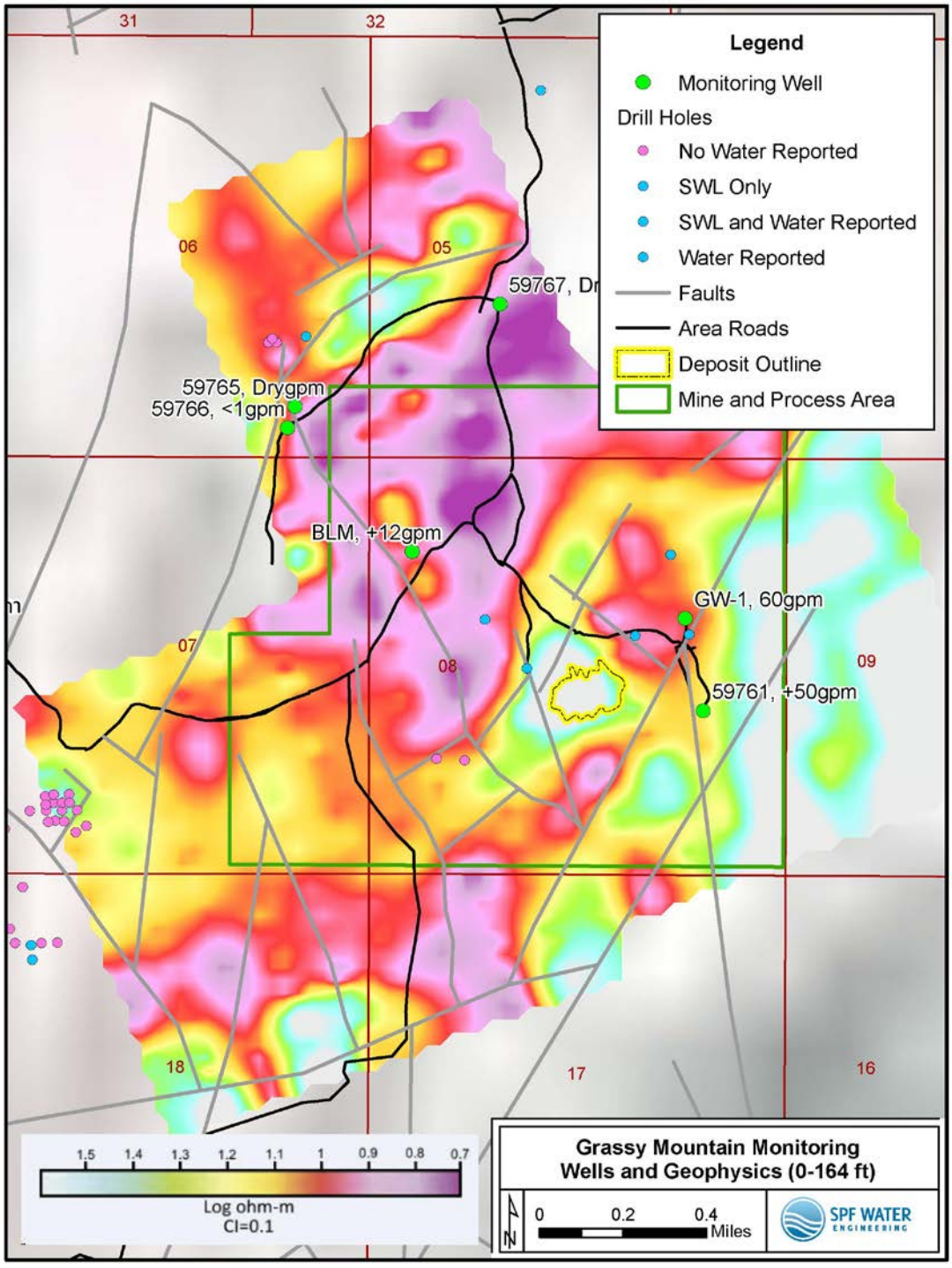


Figure 19. Monitoring wells, drill holes, and geophysics (0-164 ft)

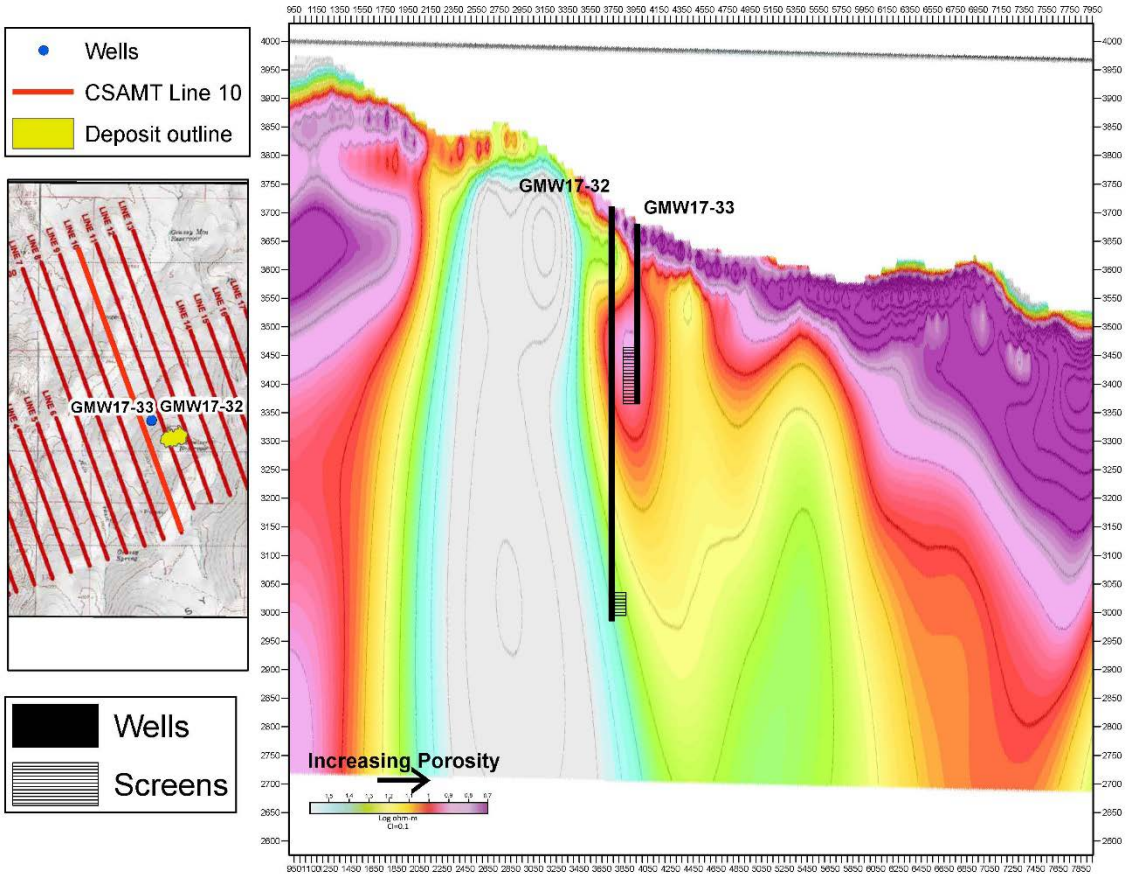


Figure 20. CSAMT Line 10 with GMW17-32 and GMW17-33

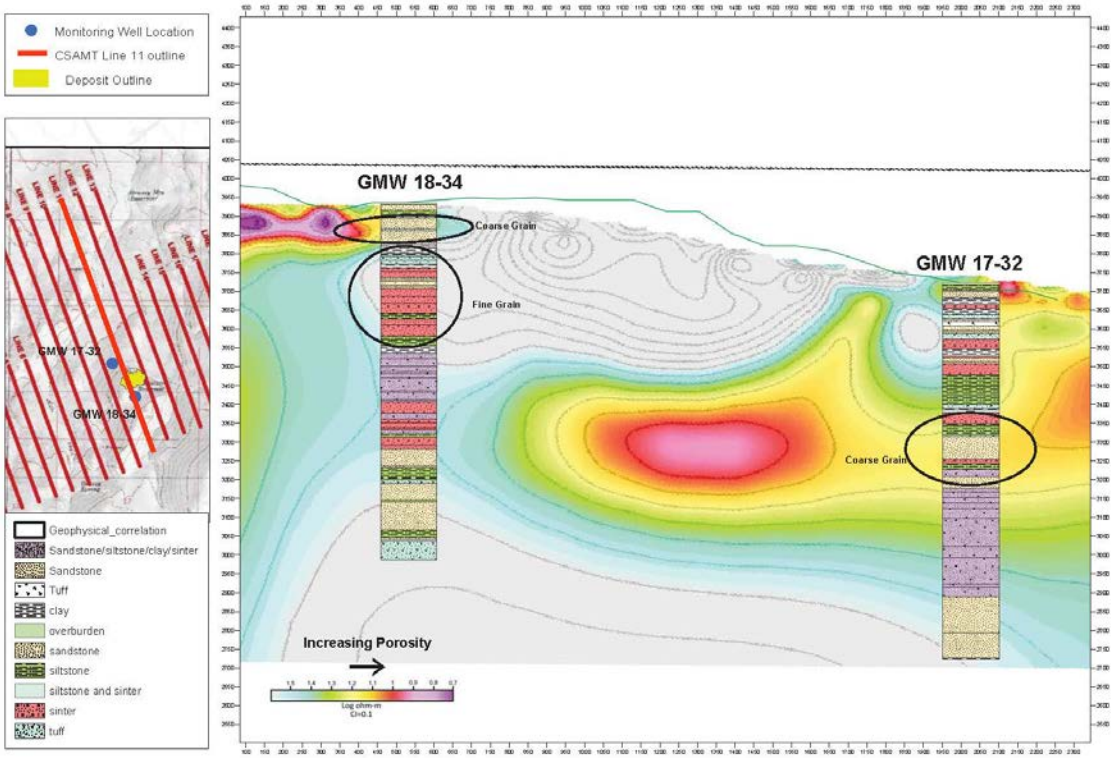


Figure 21. CSAMT Line 11 with GMW17-32 and GMW18-34

4.4 Groundwater Occurrence within the Proposed Grassy Mountain Mine

4.4.1 Water Encountered During Drilling

The proposed Grassy Mountain Mine consists of highly silicified sediments of the Grassy Mountain Formation. The proposed Grassy Mountain Mine lithology is described by Abrams (2018):

Silicification in the form of sinters and disseminated quartz is a prominent alteration type at Grassy Mountain and is largely controlled by hot-spring vents. Silicification occurs both pervasively as silica flooding, and as cross-cutting veins and stockworks. The silicified envelope has plan dimensions up to 3,000 feet (north-south) by 2,500 feet (east-west). Silicification is surrounded by widespread, barren, clay-rich (20- to 40-percent montmorillonite), tuffaceous siltstone and arkose with minor disseminated pyrite. Many of the sinters occur as sheets instead of mounds, which suggest that they are related to vents along faults rather than point sources.

The presence and quantity of groundwater within the deposit area can be described based on water reported during exploratory drilling, monitoring well construction and testing, and VWP water level data.

Figure 22 shows the proposed Grassy Mountain Mine, drill holes, monitoring wells, and piezometers. The holes with reported water are noted, with depth, elevation, and quantity of

water as observed by the well driller. The quantity of water refers to flow of water air-lifted from the hole during drilling; there is not an indication of duration of flow in the driller notes. In the deposit area, most of the drill holes did not encounter water. Of the holes that did encounter water, flows were less than 25 gpm and often from a depth of more than 800 feet (below an elevation of 3,000 feet). When drill holes encountered water outside the deposit area, higher flows in excess of 50 gpm are noted, generally east of the proposed Grassy Mountain Mine. This area is typically less silicified and it is also possible that the Badger and Schweizer faults act as barriers to groundwater flow, resulting in a mounding of water on the east and south sides of the proposed Grassy Mountain Mine. Higher well yields are likely associated with less silicified materials.

Figure 22 also includes the monitoring wells in the immediate vicinity of the deposit area, with elevation of the screened interval and short-term production noted. The deeper wells screened below an elevation of about 3,200 feet are dry or poor producers. GMW17-33 is a moderately productive well; the well was test pumped at an average rate of 28 gpm for about 2 days before a negative boundary caused the pumping water level to reach the pump. Additional information is provided in Section 4.8.2.3.

A more regional picture is provided in Figure 23 which represents well yield relative to fault location. Here it is evident that the most productive locations are generally to the east of the Grassy Mountain Fault zone as mapped in Abrams, 2018.

A plot of flow verses depth where water was encountered for drill holes within approximately 1,500 feet of the center of the proposed Grassy Mountain Mine is provided as Figure 24. There were a few drill holes that noted the presence of water that are not included in this figure as no quantity of water was recorded. There were two drill holes, 026-078 and 026-094, where the notes stated “drowning hammer” and “lots of water”. For these holes, a flow rate of 100 gpm was used just to provide a value representing the described quantity of water. Figure 24shows that there is not an obvious relationship between water produced from drill holes and depth where water was encountered. A plot of flow versus elevation (Figure 25) also does not show a relationship. This supports the notion of a complex heterogeneous aquifer system, influenced by silicification, faulting and steeply dipping beds of siltstone, clay, and sinter. The expected depth of the proposed mine is approximately 3,050 feet.

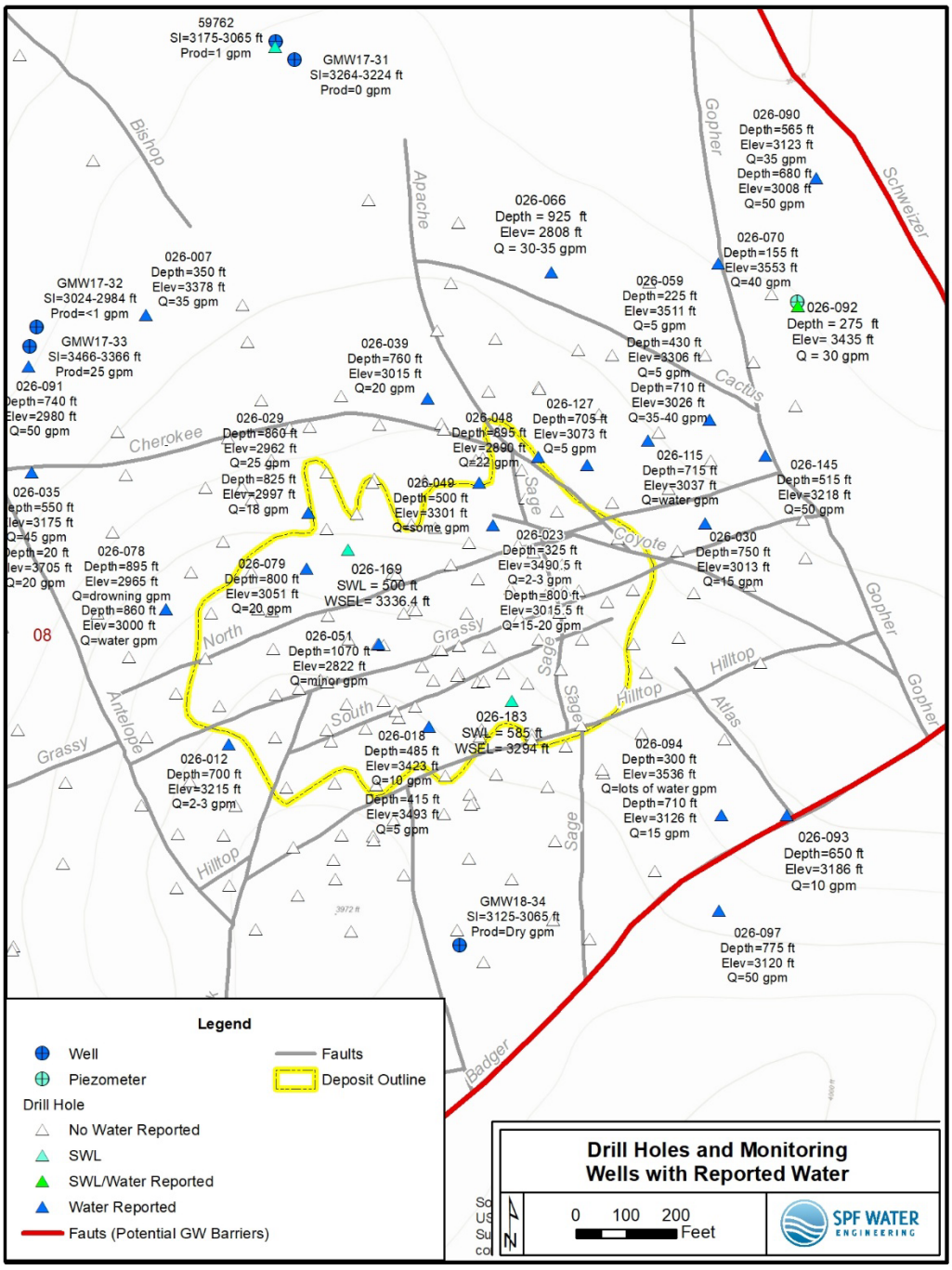


Figure 22. Drill holes and monitoring wells with reported water

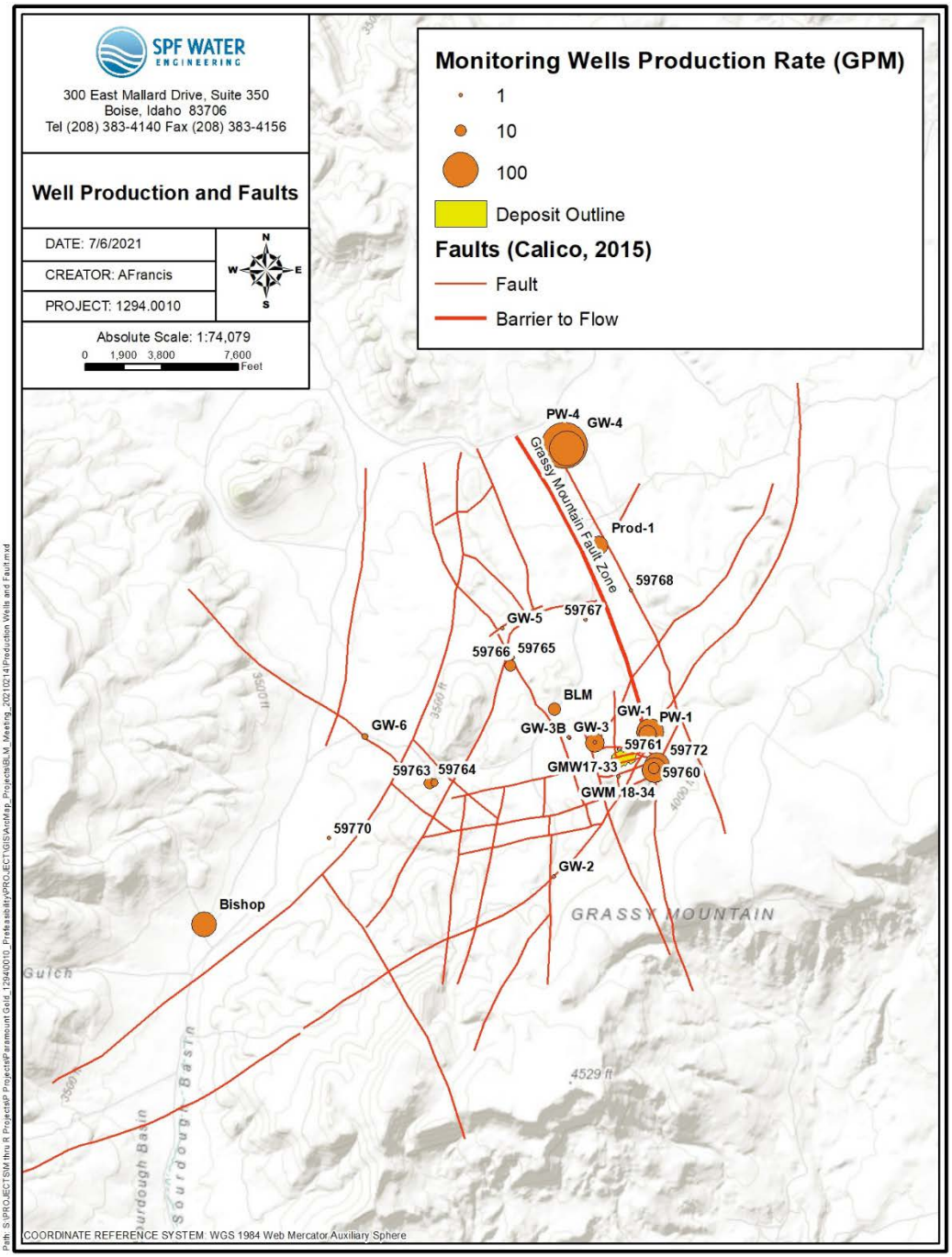


Figure 23. Well Production and Fault Location.

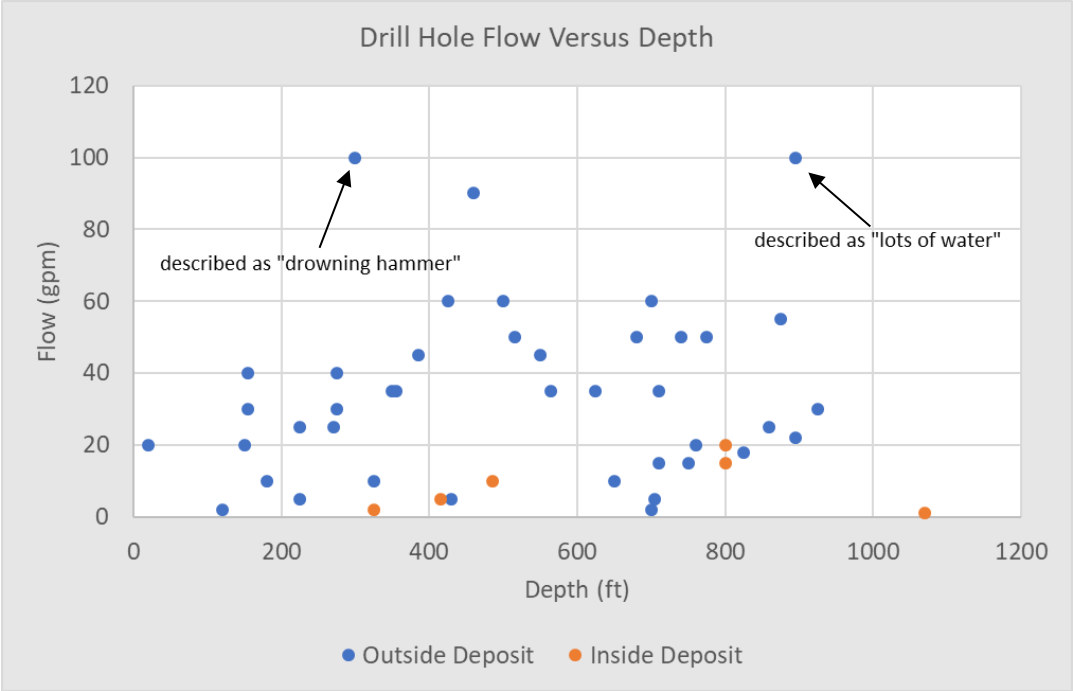


Figure 24. Plot of groundwater flow versus depth of water

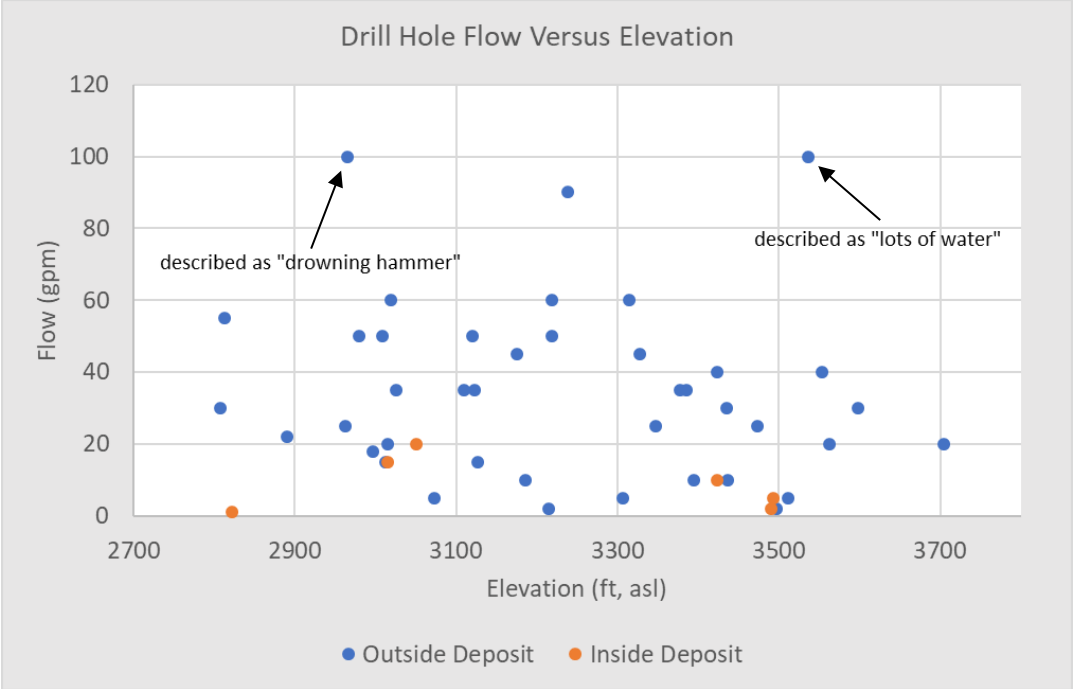


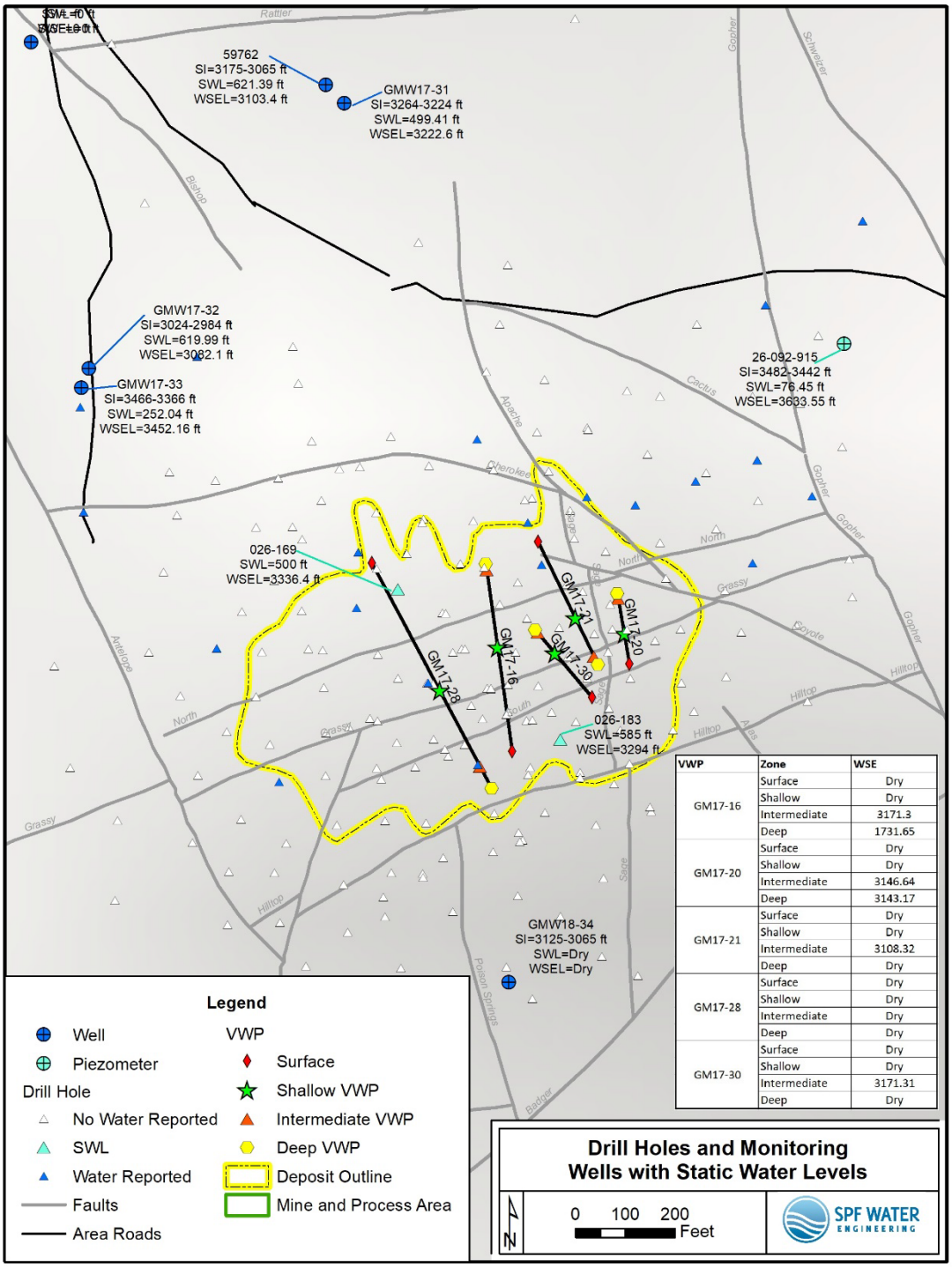
Figure 25. Plot of groundwater flow versus elevation of water

4.4.2 Static Water Levels

A map showing drill holes, monitoring wells, piezometers, and VWPs with static water levels[5] is provided as Figure 26. The map also includes the faults mapped by Calico geologists. Based on the available information, static water levels range from 3,300 feet to 3,100 feet within the deposit area. However, most of the VWPs (9 of 15) do not indicate the presence of water. None of the VWPs installed above a depth of 3,150 feet have detected water. Of the nine sensors installed below a depth of 3,150 feet, six have detected water. Measured data are presented in Figure 27.

There are at least 90 holes drilled below an elevation of 3,100 feet within the proposed Grassy Mountain Mine, and only four reportedly produced water during drilling. The expected maximum depth of the proposed mine is approximately 3,050 feet. Available information suggests that the proposed Grassy Mountain Mine is likely saturated at various depths below an elevation of 3,300 feet. However, the silicified nature of the proposed Grassy Mountain Mine and resulting very low hydraulic conductivity appears to severely restrict groundwater flow. It is also likely that the numerous faults within and near the proposed Grassy Mountain Mine act as barriers to groundwater flow particularly on the south and east sides. Static water levels in the immediate vicinity of the deposit area range from an elevation of about 3,600 feet to 3,100 feet, with water levels appearing to be strongly influenced by vertical gradient, as discussed in Section 4.6.1. The monitoring well GMW18-34, drilled to a depth of 950 feet (3003 feet msl) and located up-gradient of the deposit area, did not encounter water during drilling in the spring of 2018, and no water has been detected in the well since then.

[5] As measured on September 26, 2018



VWP	Zone	WSE
GM17-16	Surface	Dry
	Shallow	Dry
	Intermediate	3171.3
	Deep	1731.65
GM17-20	Surface	Dry
	Shallow	Dry
	Intermediate	3146.64
	Deep	3143.17
GM17-21	Surface	Dry
	Shallow	Dry
	Intermediate	3108.32
	Deep	Dry
GM17-28	Surface	Dry
	Shallow	Dry
	Intermediate	Dry
	Deep	Dry
GM17-30	Surface	Dry
	Shallow	Dry
	Intermediate	3171.31
	Deep	Dry

Figure 26. Drill holes, wells, and VWPs with static water levels

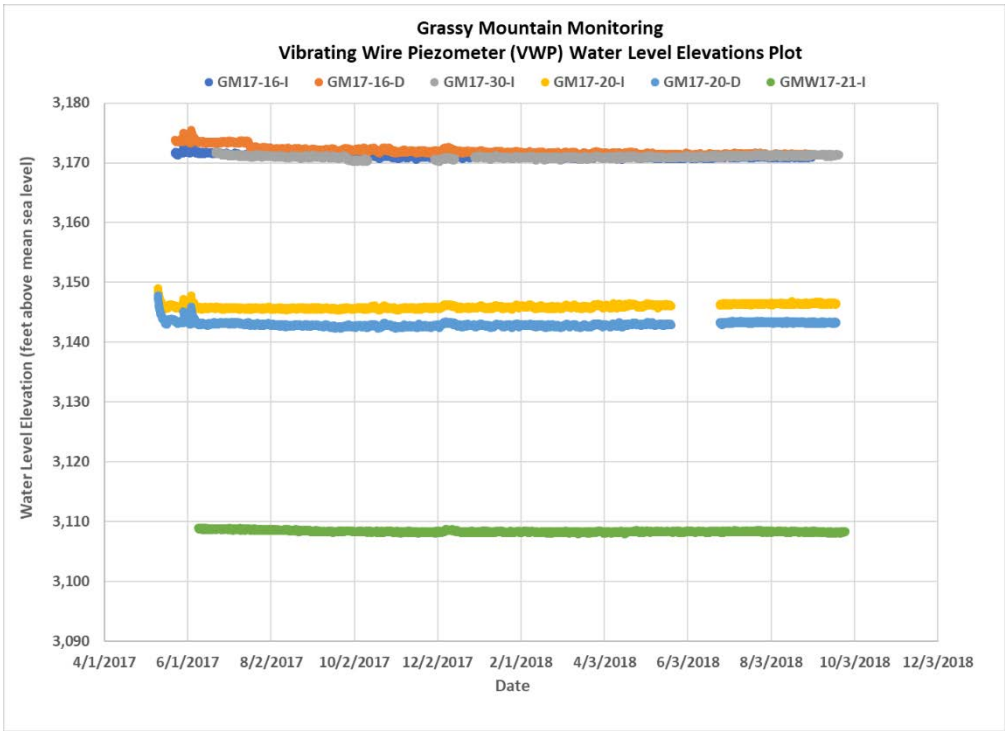


Figure 27. VWP sensor hydrographs (estimated elevations)

4.4.3 Cross-Sections

Several representative cross-sections through the proposed Grassy Mountain Mine have been developed based on drill hole lithology and the mine block model developed by Mine Development Associates (MDA 2018). The cross sections show the drill holes and depth where water was encountered and the drill holes where the VWPs were installed and the resultant static water level. These cross-sections are included in Appendix E.

The cross-sections demonstrate the sporadic nature of water encountered, suggesting that while likely saturated below an elevation of 3,300 feet, groundwater flow is severely restricted by low hydraulic conductivity as a result of silicification, faults, and steeply dipping interbedded sedimentary facies changes. Another factor that affects the lack of water in the proposed Grassy Mountain Mine is the limited recharge area contributing groundwater to the deposit (refer to Section 4.9.1).

Groundwater occurrence is variable, both laterally and vertically within the ore body, at elevations ranging from 3,500 feet to 2,800 feet with the encountered water-bearing zones mainly downgradient of the majority of the faulting and mainly in the arkose. Because groundwater flow is hindered by faulting and silicification upgradient and within the deposit area, the primary source of groundwater found on the downgradient side of the proposed Grassy Mountain Mine may be immediate local recharge. Boreholes that encountered groundwater within the deposit area found limited amounts, on the scale of less than 20 gpm based on driller's reports (Figure 25).

Groundwater elevations measured within the deposit area are often deeper than groundwater elevations measured immediately outside the deposit area. The deeper groundwater elevations, and associated large vertical gradients, are related to the geology of the proposed Grassy Mountain Mine. Specifically, decreased hydraulic conductivity associated with silicification, and the compartmentalization created by faulting, impedes groundwater flow into the proposed Grassy Mountain Mine from adjacent and upgradient portions of the Grassy Mountain Formation. Thus, the rate of groundwater flow into the proposed Grassy Mountain Mine is believed to be much less than the rate of flow through the permeable zones of Grassy Mountain Formation surrounding the proposed Grassy Mountain Mine. These same geologic mechanisms, silicification and faulting, might have a different effect on the underlying Kern Basin Tuff, however. If the vertical hydraulic conductivity of the Kern Basin Tuff beneath the proposed Grassy Mountain Mine is maintained, or even increased by silicification and fracturing, then vertical flow from the Grassy Mountain Formation into (and potentially through) the Kern Basin Tuff could be proportionately greater within the proposed Grassy Mountain Mine than in areas outside the proposed Grassy Mountain Mine. In such a scenario, the Kern Basin Tuff beneath the proposed Grassy Mountain Mine could function as a partial drain for the small amount of groundwater flow that enters the proposed Grassy Mountain Mine. This drainage effect would create the lower groundwater elevations found within deep portions of the proposed Grassy Mountain Mine.

4.5 Groundwater Elevation and Well Depth

A plot of completion depth (well screen midpoint elevation) versus groundwater elevation for wells (shown in blue circles) and VWPs (shown in orange triangles) near the deposit area is shown as Figure 28. Groundwater elevation is strongly correlated with screen depth in this area. Figure 28 suggests an aquifer system with strong vertical gradients (i.e. deeper wells have deeper water surface elevations). Vertical gradient within the aquifer system is discussed in more detail in Section 4.6.1.2.

If the completion depth of all monitoring wells is plotted against groundwater elevation (Figure 29), the correlation is not as strong, indicating less of an influence of vertical gradient in the overall area. Finally, if the plot only includes the wells with completion depths greater than 50 feet and located downgradient of the proposed Grassy Mountain Mine (Figure30), the correlation is even weaker, with wells constructed across a range of elevations exhibiting similar water surface elevations. The downgradient water level data suggests a single aquifer system, with a consistent piezometric surface (i.e., wells that are completed at different elevations show relatively consistent aquifer pressure). These wells are not affected by aquifer silicification, and vertical gradients are not as pronounced. In general, the plots of completion depth versus groundwater elevation suggest a single aquifer system, with high vertical gradients near the deposit area. The overall concept of a single aquifer system has been posed by previous investigations (JMM 1991, ABC 1992).

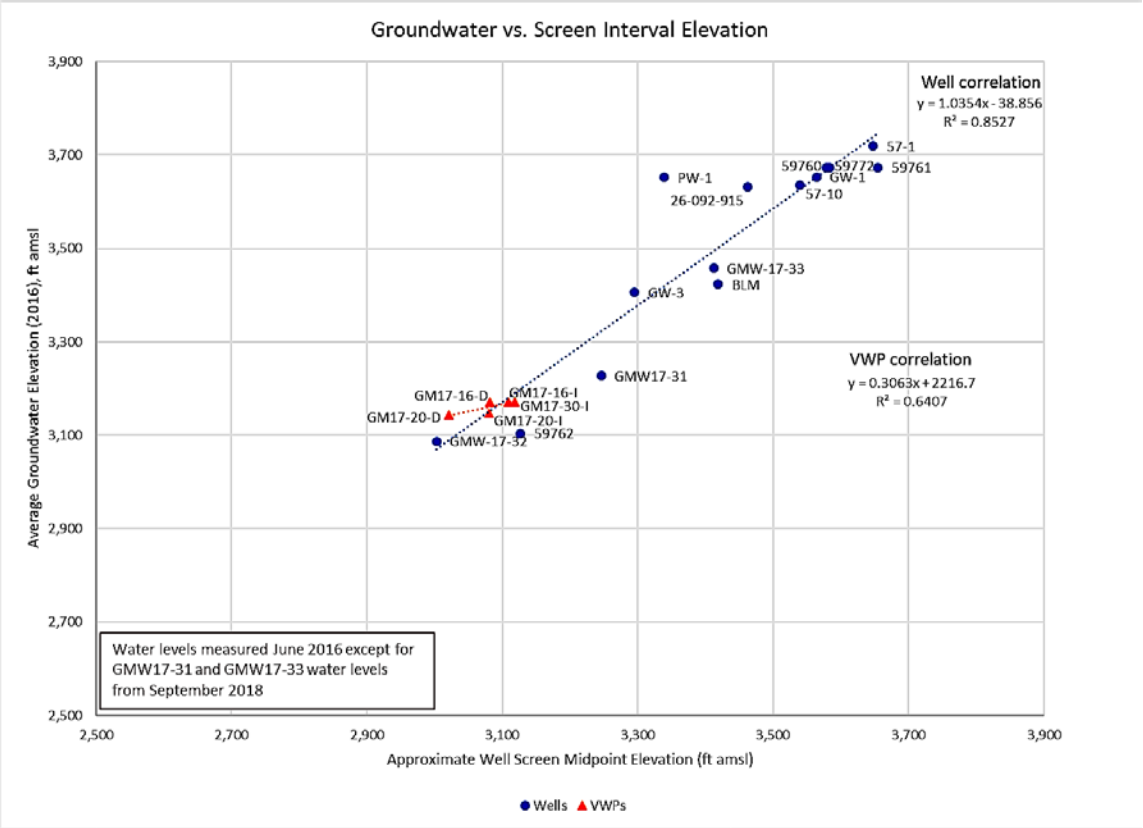


Figure 28. Groundwater elevations vs. well/VWP completion elevations near the deposit area

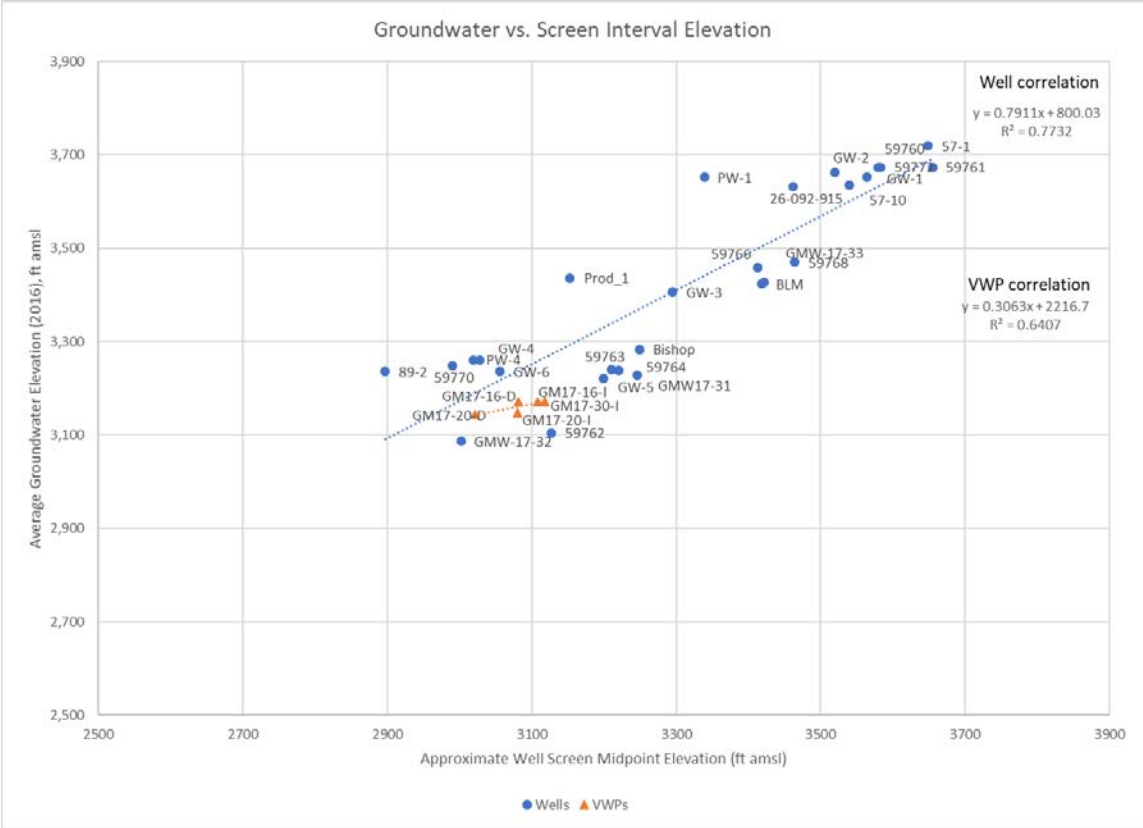


Figure 29. Groundwater elevations vs. well/VWP completion elevations (all wells)

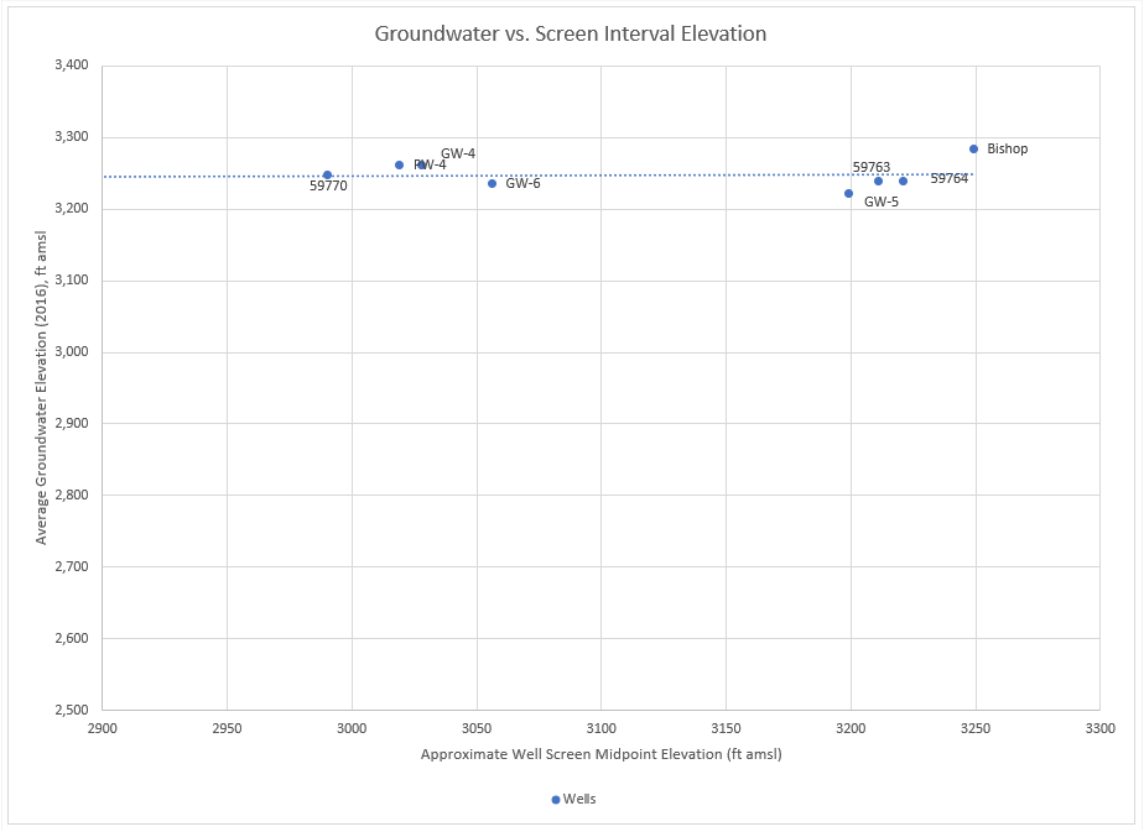


Figure30. Groundwater elevations vs. well/VWP completion elevations (only downgradient wells)

4.6 Potentiometric Surface

Potentiometric surface maps are two-dimensional depictions of groundwater flow. In reality, groundwater flow occurs in three-dimensions. These maps, however, are useful for providing an indication of the overall, general groundwater flow direction and hydraulic gradient. This section describes the potentiometric surface of the aquifer system near Grassy Mountain. The potentiometric surface reflects a single aquifer system that is supported by geology, water quality, potentiometric surface, and water level data.

Groundwater elevation (potentiometric surface) contour maps have been developed using the annual average water level data from 2013 through 2017 and for each quarter in 2017 (Vol 1 Appendix E). With additional water level data from monitoring locations completed in late 2017 and early 2018, contours were also developed for average water levels in 2018. This includes water level measurements from new monitoring wells (GMW17-31, GMW 17-33, and GMW18-34) and VWPs (GM17-16, GM17-20, and GM17-21). In areas where there are "clustered" wells (GMW17-32/GMW17-33 and 59762/GMW17-31), shallower water levels

were used to created contours. These maps were created using the two-dimensional mapping software utility Surfer® (Version 8) and are presented in the groundwater baseline report (SPF, 2021a). The potentiometric surface map created using 2018 water level data is provided in this report as Figure 31. This map is considered representative of groundwater flow in the vicinity of the proposed Grassy Mountain Mine. In addition to recently measured water levels, the 2018 contour surface incorporated static water levels from drill holes to provide the most accurate representation of aquifer conditions. Due to the consistent lower water level elevations in the deposit area with observed water levels between 3,100 and 3,300 feet msl, a single control point was added in the western portion of the deposit area for the 2018 contours. Review of the groundwater potentiometric surface suggests the following.

- The groundwater level data available for 2013 through 2017 indicate the potentiometric surface has remained relatively constant over the period of monitoring, generally without apparent seasonal influences. There are a few wells that do appear to be influenced by winter and spring precipitation, but these are either shallow wells (59768) or wells completed in fractured basalt near a seasonal water impoundment (59760, 59761, and 59772). The consistent potentiometric surface reflects stable groundwater level trends measured in individual wells over time, coupled with a relatively high gradient that overwhelms any influence of minor water level fluctuations. These contours do not account for lower groundwater elevations measured in the deposit area. Water levels are represented at an elevation of approximately 3,600 ft msl.

- Groundwater flow generally occurs from the southeast to the northwest in the vicinity of the Project, from higher elevations along the base of Grassy Mountain (~4,000 feet amsl) to lower elevations along Negro Rock Canyon (~3,200 feet amsl). The groundwater elevations range from approximately 3,700 feet amsl (at well 57-1 southwest of the proposed Grassy Mountain Mine) to approximately 3,220 feet (at well GW-5 northwest of the proposed Grassy Mountain Mine).

- Contours for average water level conditions in 2018 (Figure 31) show local variations are apparent in the potentiometric surface, attributed to structural and/or spatial contrasts in aquifer permeability distribution and vertical gradients possibly due to silicification. For example, steeper horizontal hydraulic gradients are apparent between wells upgradient of the deposit area (59760, 59772) and water level measurements made in the highly silicified mine area. Upgradient water levels are >3,670 ft msl and water levels in the deposit area are between 3,100 and 3,300 ft msl. In the 2018 contours, the direction of groundwater flow is still to the northwest, but there is a potentiometric depression within the deposit area. In the contours for 2013 to 2017 when much of the data in the deposit area was not available, there appeared to be a continuous downward gradient from 59772, ~3670 ft msl (completed from a depth of 165-205 ft [3603-3563 ft msl]) to GW-3, 3400 ft msl (completed from a depth of 320-350 feet [3314-3284 ft msl]). In the

deposit area, the high degree of silicification (Figures 14 through 18) has created very low conductivity which significantly inhibits groundwater flow in this area. The potentiometric surface in Figure 31 reflects the aggregate impact of structural and lithologic variation.

- GMW18-34 was drilled in 2018 with a completion interval of 830 to 890 feet [3127-3067 ft msl]. This well was drilled in the upgradient side of the deposit area and has been reported as dry since its completion. The lack of water in this well an indication of very low hydraulic conductivity in the silicified area of the deposit.

- Wells GMW17-32 and 59762, and drill hole and VWP data support the conclusion of a lower water level surface in the deposit area. The groundwater elevations for these wells range from approximately 3,150 feet amsl at the proposed Grassy Mountain Mine to approximately 3,100 feet at the two monitoring wells just northwest of the proposed Grassy Mountain Mine.

- It is worth noting that the only deep monitoring wells (GMW17-32 & 59762) in the network are completed near the deposit area and that other nearby monitoring wells completed at similar elevation (approximately 3,000 to 3,100 feet), including PW-4, GW-4, GW-6, and 59770, all have static water elevations more than 100 feet higher than the deep wells. Due to the significant compartmentalization of the aquifer near the deposit area from the silicification, faulting, and steeply dipping sedimentary beds, the vertical gradient is increased.

- Due to the high heterogeneity and fracturing in the deposit area and an apparent lack of connectivity of the fractures, there are likely pockets of water above the potentiometric surface represented in Figure 31.

- Down gradient and northwest of the deposit area, wells 59766 (completion interval 25 to 45 feet [3435-3415 ft msl]) and 59768 (completion interval 10 to 25 feet [3471-3456 ft msl]) are completed in shallow unconfined sandstone sections of the aquifer. 59768 is located further north of the project closer to Prod-1 where the aquifer water level is above ground surface. The static water level of 59768 fits in well with the water level contour map. 59766 has a relatively shallower water level than the nearby deeper completed wells causing the upgradient contour lines to bend in its direction. It is likely this well is completed in a semi-perched section of the aquifer created by faulting or discontinuous confining layers from which water flows to the underlying water bearing zones and some of the surfaces to the northwest at the spring called Tank East of Negro Rock. Along with 59766, BLM and GW-3 have elevation water levels that bend water level contours down gradient. Each of these wells are located along the same fault (Figure 29). This fault has been highlighted as a potential conduit for groundwater flow.

- Another area where faulting effects the flow of groundwater occurs at 59763, 59764, and GW-6. These wells are just to the west of the fault identified as a potential conduit. Here water levels lower elevations in the area of these wells create a trough parallel to the direction of groundwater flow.
- With increasing distance to the northwest from the deposit area, there is a much less pronounced gradient. The more gradual gradient is likely due to higher permeability associated with decreasing influence of silicification.

- The potentiometric surface in Figure 31 is also represented in cross sections H through K in Appendix E. These figures represent how the single aquifer system is affected by the faulting and silicification near the mine deposit. Near the mine, significant horizontal gradients are present (GMW17-32 and GMW-33 in Cross-Section I) and with increasing distance from the mine, water levels mirror topography with a consistent gradient.

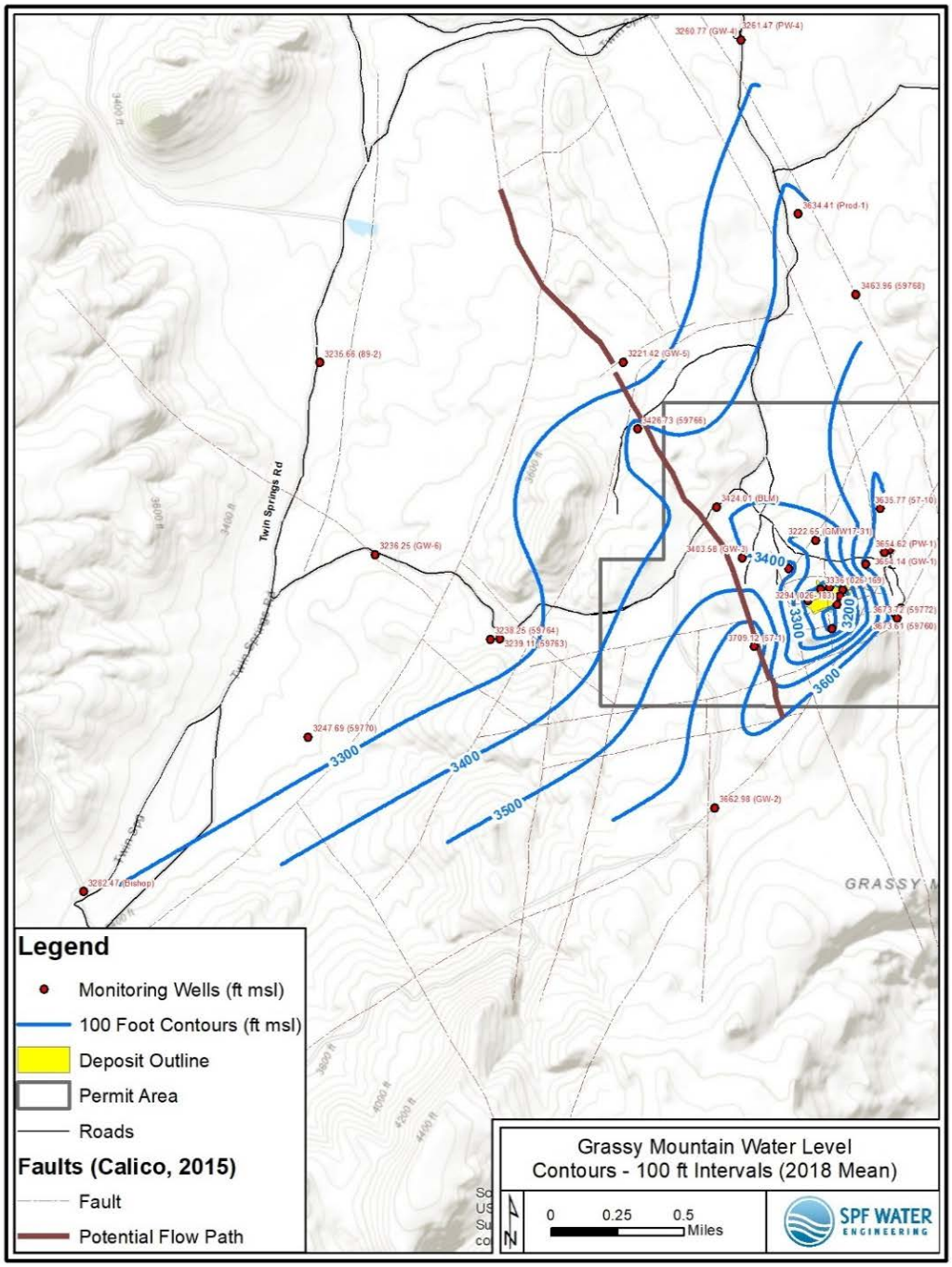


Figure 31. Potentiometric surface based on shallow wells (average 2018 conditions)

4.6.1 Hydraulic Gradients

4.6.1.1 Horizontal Hydraulic Gradients

The horizontal hydraulic gradient is calculated from the change in groundwater elevation over distance between two locations. The hydraulic gradient is a manifestation of flow resistance; higher gradients are an indication of higher resistance to groundwater flow. With the exception of the deposit area, the shallow potentiometric surface generally shows a relatively high and somewhat uniform horizontal hydraulic gradient in the hilly area to the southeast and a flatter gradient toward the north and northwest. In the southeast area, the high gradients are most likely the result of low hydraulic conductivity and a lack of connectivity. The steep topography may also be a contributing factor. The gradient lessens to the north and northwest where aquifer permeability increases and the topography is flatter. This general conclusion is also reported in ABC, 1992.

As shown in Table 3 for average 2016 water level conditions from the shallow monitoring wells, the hydraulic gradient varies considerably across the area, ranging from approximately 0.0001ft/ft (between wells GW-6 and 89-2) in the basin to 0.18 ft/ft (between wells 57-1 and GW-3) near the deposit area.

Steeper gradients (i.e., between wells 57-1 and GW-3 and wells 59766 and GW-5) are mainly attributed to contrasting permeability (or transmissivity) zones that reflect a transition between areas of lower to higher permeability. Section 4.3.4 presents geophysical evidence that silicification may contribute to differences in permeability. Higher silicification results in lower permeability. Faulting in the vicinity may also contribute, but the data presented in this report support that faults have varying behavior within the study area (i.e., flow conduits or barriers, or no obvious effect on horizontal gradient; the influence of faults on groundwater flow is discussed in Section 4.7).

The area surrounding wells 59766, BLM, and GW-3, conversely suggests a localized hydraulic gradient from northwest to southeast that is influenced by the depth of the completion intervals. However, these wells are completed at significantly different depths with GW-3 having the deepest screened interval and 59766 the shallowest. With the regional vertical gradient in the Study Area consistently and strongly downward, the progressively deeper screens for these three wells going from northwest to southeast cause the gradient direction in this area to appear to be reversed from the overall trend, with a higher groundwater elevation at well 59766 (3,437 feet) compared to the BLM well (3,423 feet) and GW-3 well (3,406 feet).

Well	Average 2016 Groundwater Elevation (ft amsl)	Approximate Horizontal Distance, dl (ft)	Approximate Groundwater Elevation Difference, dh (ft)	Horizontal Hydraulic Gradient (dh/dl)
57-1	3,702.14	1,625	296	0.18
GW-3	3,406.57			
59766	3,427.47	1,385	206	0.15
GW-5	3,221.12			
GW-2	3,663.01	5,425	424	0.08
59763	3,239.35			
GW-6	3,236.38	3,920	1	0.0001
89-2	3,235.83			
59766	3,427.47	3,432	21	0.006
GW-3	3,406.57			

Table 3. Horizontal hydraulic gradients (average shallow 2016 conditions)

4.6.1.2 Vertical Hydraulic Gradients

The vertical hydraulic gradient is calculated from the change in groundwater elevation over difference in well completion depth. The vertical hydraulic gradients for select pairs of wells presented in Table 4 and Table 5 were calculated by dividing the difference in groundwater elevation by the vertical distance between well screen midpoint elevations[6].

Table 4 utilizes average 2016 conditions for four well pairs that are not within the close vicinity of the deposit area and therefore not as influenced by silicification. Overall, downward (positive) vertical hydraulic gradients (10^{-2} to 10^{-3} range) are present throughout the area. This trend is consistent with areas that receive recharge associated with higher topography, such as Grassy Mountain. The well pair 59763/59764 suggests a vertical hydraulic gradient with an upward trend (shown as a negative value in Table 4 below). 59763 is completed in fractured volcanics while 59764 is completed in sandstone. Such a variance in lithology in wells only 150 feet apart indicates possible faulting between the two wells. These wells are located hydraulically downgradient of the deposit area.

[6] In instances where multiple screens are present in a well (i.e., PW-1 and PW-4), the highest screen interval was selected.

Well	Average 2016 Groundwater Elevation (ft amsl)	Screen Midpoint Elevation (ft amsl)	Approximate Vertical Distance, dl (ft)	Approximate Groundwater Elevation Difference, dh (ft)	Vertical Hydraulic Gradient (dh/dl)
PW-4	3,261.06	3,051	23	0.43	0.02
GW-4	3,260.63	3,028			
GW-1	3,653.98	3,563	184	1.03	0.006
PW-1	3,652.95	3,379			
59761	3,672.64	3,655	76	0.12	0.002
59760	3,672.52	3,579			
59763	3,239.35	3,211	-11	0.76	-0.07
59764	3,238.59	3,222			

Table 4. Vertical hydraulic gradients (average shallow 2016 conditions)

Table 5 presents vertical hydraulic gradients between shallow and deep zones within the silicified area at the proposed Grassy Mountain Mine. Each of these paired wells were drilled approximately 50 feet apart. The estimated vertical gradient in this area is downward and quite steep, an average of 0.95 between the two pairings. The aquifer near the proposed Grassy Mountain Mine has a much higher vertical gradient than the aquifer downgradient of the proposed Grassy Mountain Mine; This steeper gradient appears to be related to a lack of fracture connectivity caused by silicification, faulting, and steeply dipping beds. The high vertical gradient is also evident in Figure 28 in Section 4.5 that shows that water level elevation is closely related to the depth of completion near the deposit area.

Well	Groundwater Elevation (9/2018), ft amsl	Screen Midpoint Elevation (ft amsl)	Approximate Groundwater Elevation Difference, dh (ft)	Approximate Screen Elevation Difference, dl (ft)	Vertical Hydraulic Gradient (dh/dl)
GMW17-31	3,227.59	3246	-124	-119	1.0
59762	3,103.40	3127			
GMW17-33	3,458.00	3413	-371	-407	0.9
GMW17-32	3,087.10	3006			

Table 5. Shallow to deep vertical gradients near deposit area (9/26/2018)

4.7 Fault/Structural Influence on Groundwater Flow

The proposed Grassy Mountain Mine is located within an interpreted horst block, structurally affected by complex block faulting and rotation (Abrams 2019). From a two-dimensional perspective, faults regionally appear to act as partial barriers to groundwater flow. Figure 32 shows drill hole and monitoring well water production data and faults. There are typically higher producing wells south and east of the Badger and Schweizer faults and north of the Cherokee and Coyote faults.

The geologic cross-sections provided in Appendix E also provide insight into the effect of faulting on the presence of groundwater in the local vicinity of the proposed Grassy Mountain Mine. These cross-sections help visualize the degree of compartmentalization caused by the significant number of intersections between the faults and lower permeable sedimentary facies (clay, sinter, and siltstone). This is especially evident in cross-section I in Appendix E where water levels indicate that significantly large gradients are present near the mine area. The contour surface represented in cross-section I is based on the water level observed in GMW17-33 which is significantly shallower than the water level in GMW17-32. In the immediate vicinity of the deposit, the horizontal gradient becomes even steeper based on VWP and drill hole data. The sections also show the inconsistent nature of the encountered water during drilling.

Even with the faults in the Study Area generally acting as low permeability barriers in the sandstone and arkose, there is evidence for this same faulting to be the cause of increased permeability into the underlying tuff. The increase in the welding of the volcanic tuff in near the proposed Grassy Mountain Mine due to the geothermal activity likely caused the tuff to become more brittle, increasing fracturing during faulting. With significantly more faulting in the deposit area compared to the rest on the study area in combination with a welded brittle tuff, it is possible the deeper groundwater is draining into the underlying tuff. With such a small amount of water being able to flow to the deep area under the silicified zone, it is likely a fractured tuff would be able to have a high enough hydraulic conductivity to drain this water.

Where measurable groundwater is encountered within the deposit area (Figure 22), it is certainty possible that local faults along with localized fracturing may serve as conduits for flow; but available evidence indicates that the degree to which this occurs is limited. A potential example of this would be the relatively high rate of production (~50 gpm) at drill hole 026-097 located on the southeast side of the Badger Fault versus the occurrence of mostly dry drill holes on the northwest side of the Badger Fault.

On the regional scale, the Grassy Mountain fault zone, which includes the Schweizer fault, extends north of the proposed Grassy Mountain Mine (RQV 2015) (Figure 22). This fault zone appears to restrict lateral groundwater flow, serving as a negative hydraulic boundary (JMM, 1991). This fault zone is presumed to have been detected in test pumping of production wells PW-1, Prod-1, and PW-4, refer to Section 4.8.The most productive wells in the vicinity of the

proposed Grassy Mountain Mine are located along this fault zone; with higher groundwater flows on the east side.

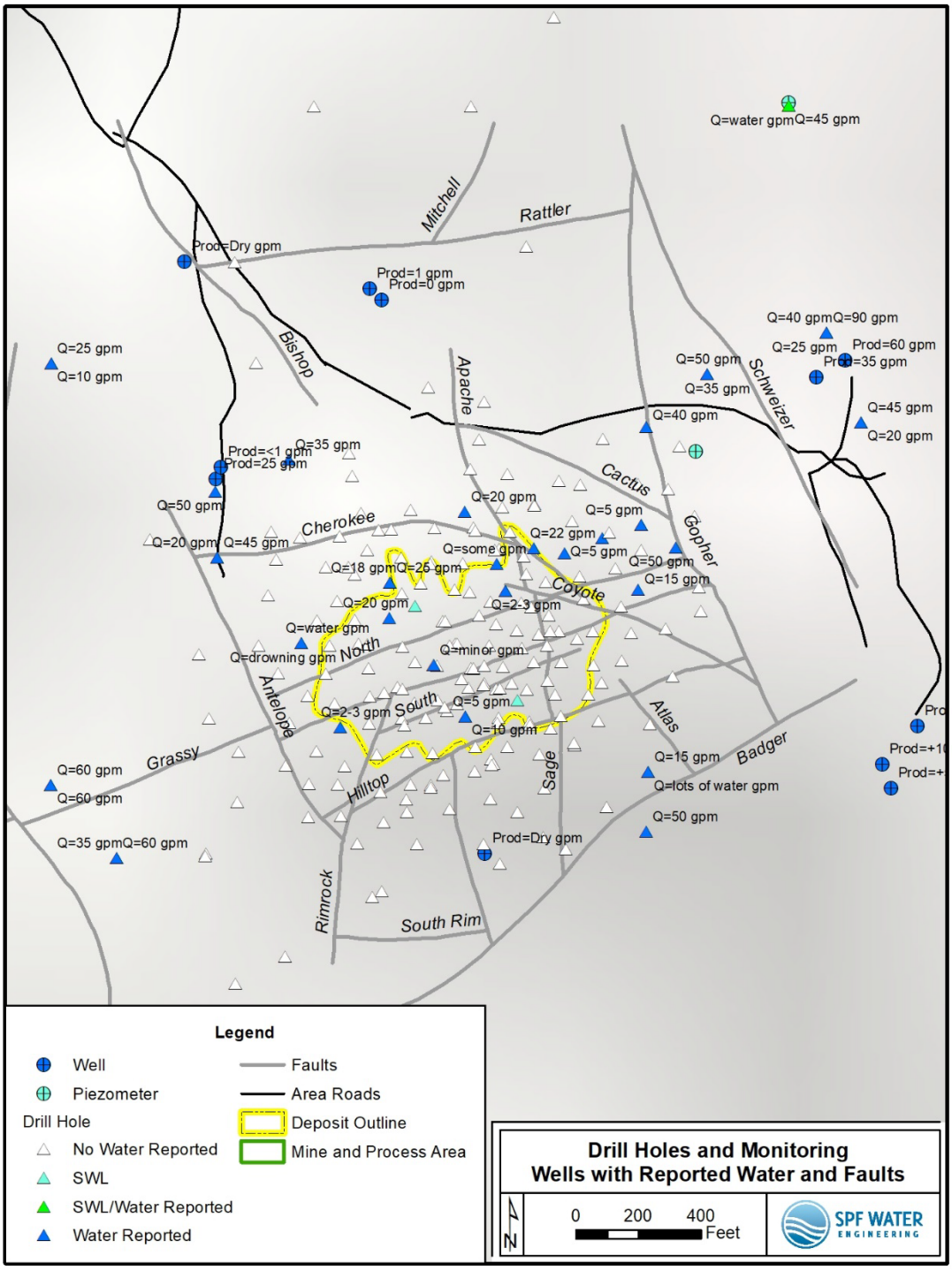


Figure 32. Drill hole and wells with water data and faults

4.8 Hydraulic Properties

Aquifer hydraulic properties in the vicinity of the proposed Grassy Mountain Mine were estimated from aquifer pumping tests conducted during the late 1980s and early 1990s and more recently on 59762, GMW17-32 and GMW17-33 in 2017. The latter wells are located near the deposit area.

The majority of wells installed within the Grassy Mountain vicinity appear to be completed within confined to semi-confined aquifer conditions, with increasingly confined conditions at depth. This designation is based on observed lithologic conditions documenting the occurrence of discontinuous, alternating confining layers (i.e., unconsolidated silt and clay zones and consolidated sedimentary and bedrock deposits) noted on well logs.

4.8.1 Historical Pumping Tests

Table 6 provides the estimated hydraulic conductivity and transmissivity based on historical test pumping of Prod-1, PW-1, PW-4, and Bishop (Rye Field). The estimated hydraulic conductivity values on the order of 10^{-3} cm/s to 10^{-5} cm/s (0.03 ft/d or 3 ft/d) are within the range of expected values for sandstone and conglomerate aquifers (Freeze and Cherry, 1979).

Transmissivity estimates based on the pumping tests are summarized below (JMM, 1991):

- Prod-1, tested at 100 gpm, ranged from 1,500 gpd/ft near the well, and decreased to 200 gpd/ft after 800 minutes of pumping.
- PW-1, tested at 30 gpm, ranged between 100 and 250 gpd/ft.
- PW-4, tested at 145 gpm, ranged from 3,700 gpd/ft near the well, and decreased to 1,800 gpd/ft after 1,000 minutes of pumping. Aquifer storativity was estimated at 8.5×10^{-5}.
- Bishop (Rye Field), tested between 14 and 25 gpm, ranged from 250 gpd/ft near the well to 150 gpd/ft after 30 minutes of pumping.

The decline in transmissivity observed during test pumping of Prod-1, PW-1, and PW-4 was attributed to one or more negative hydraulic boundaries; the boundaries might be attributable to local thinning of the aquifer, faulting, or decreasing aquifer permeability (JMM, 1991).

A confined aquifer type in the vicinity of PW-4 is supported by an estimated storativity on the order of 8.5×10^{-5} calculated from testing of well PW-4 and monitoring of nearby GW-4. Confined aquifers typically have storativity values in the range of 0.005 to 0.00005 (Freeze and Cherry, 1979).

Testing of these wells indicates that hydraulic conductivity increases moving north, away from the proposed Grassy Mountain Mine (PW-1 is closest to the proposed Grassy Mountain Mine, PW-4 is farthest away). The low hydraulic conductivity near the deposit area may be due to silicification of the sedimentary rocks (JMM, 1991).

Well	Date	Test Type	Reported Estimated Hydraulic Conductivity (cm/s)	(Low) Estimated Hydraulic Conductivity (ft/d)	(High) Estimated Hydraulic Conductivity (ft/d)	Estimated Screen Elevation (ft amsl)	Screened Lithology (Drillers Report)
Prod-1	1/14/1991 - 1/16/1991	Constant Rate	10^{-4} - 10^{-5}	0.03	0.3	3,291-3,181	Sandstone with blue clay
						3,111-3,081	Sandstone with blue clay
						3,056-3,016	Sandstone (hard with fractures)
PW-1	1/29/1991-2/5/1991	Constant Rate	10^{-5}	0.03		3,389 - 3,369 3,309 - 3,289	Brown clay and sand Sandstone
PW-4	11/28/1989-12/5/1989	Constant Rate	10^{-3}	3		3,061 - 3,041	Sandstone
						3,001 - 2,981	Sandstone and conglomerate
Bishop Rye Field Well	2/14/1991	Variable Rate	10^{-4} - 10^{-5}	0.03	0.3	3,252 - 3,242	Coarse gravel

Table 6. Estimated hydraulic conductivity from pumping tests (adapted from ABC, 1992)

4.8.2 Pumping Tests Performed in 2017 & 2019

Aquifer pumping tests were performed during 2017 on selected wells (59762, GMW17-32, and GMW17-33). These wells were selected based on their proximity to the mine. Prior to this work, there were no known aquifer testing data in close proximity to the deposit. Pumping test results for each well are summarized in Table 7.

Well	**Date**	**Test Type**	**(Low) Estimated Hydraulic Conductivity (ft/day)**	**(High) Estimated Hydraulic Conductivity (ft/day)**	**Screen Elevation (ft msl)**	**Screened Lithology (Drillers Report)**
57962	12/6/2017	Constant Rate	0.0035	0.02	3175-3065	Clayey siltstone and silicified siltstone
GMW17-32	12/11/2017	Variable Rate	0.0004	0.003	3026-2986	tuff, arkose, siltstone, and clay
GMW17-33	12/14/2017 - 12/18/2017	Variable Rate	0.2	0.4	3465-3365	sinter and silicified siltstone

Table 7. Estimated hydraulic conductivity from pumping tests performed in 2017

4.8.2.1 59762

Well 59762 was installed in 1993 to a depth of 657 feet bgs and screened from 537 feet 657 feet bgs in clayey siltstone and silicified siltstone based on the driller's report. The measured depth to groundwater in the well has ranged from 619 to 621 feet bmp in quarterly measurements taken since 2013 (Figure 13).

Well 59762 was tested on December 6, 2017, at an average pumping rate of approximately 1 gpm for 2 hours. Excessive drawdown in the well to near the pump intake prohibited longer-term testing. The static (pre-pumping) water level was 627.91 feet bmp[7]. The measurement point was approximately 0.73 feet above the 4-inch well casing. The pump intake was set at 655 feet below the reference point. The total drawdown in the well at the end of the pumping period was approximately 23 feet. No wells in the vicinity appeared to respond to pumping at Well 59762.

Transmissivity was estimated using the Cooper-Jacob non-equilibrium equation[8] (Driscoll, 1986) by plotting the elapsed pumping time on a semi-log plot with drawdown (Figure 33). Straight-line trends are not apparent on the plot for Well 59762, indicating flow to the well is not strictly two-dimensional and radial. The estimated transmissivity during the initial period of testing (approximately 40 minutes) was 33 gpd/ft (or 4 ft^2/d). An apparent negative boundary was encountered, based on increased drawdown effects, decreasing the transmissivity to approximately 15 gpd/ft (2 ft^2/d). Transmissivity estimates are based on projecting straight-line trends beyond the period tested due to the short duration of testing and apparent boundary effects. These transmissivity estimates are considered to be an over-estimate, as they do not account for casing storage.

Transmissivity is the product of the hydraulic conductivity and saturated thickness of the aquifer. The saturated aquifer thickness extends from the groundwater table to the base of the aquifer. Based on previous investigations (JMM, 1991 and ABC, 1992), the saturated aquifer thickness is estimated at 200 to 300 feet in the Grassy Mountain vicinity. The actual saturated thickness may be more or less depending on the degree of hydraulic continuity, especially since some regions of the aquifer may behave as compartmentalized zones. The estimated hydraulic conductivity near Well 59762 would be approximately 0.02 ft/d, assuming an average saturated aquifer thickness of 200 feet for the area. The overall hydraulic conductivity may be less based on unsustainable pumping rates, excessive drawdown effects, and expected trends over a longer period of pumping.

[7] The field measured water level in the well on November 29, 2017, prior to well development or pumping activities, was 620.63 feet below the measurement point. The measurement on December 6th before testing likely represents a recovering water level following well development (bailing) efforts.

[8] The Cooper-Jacob method is based on simplifying assumptions (i.e., the aquifer is uniform in extent, the well is 100 percent efficient, among other assumptions) that may not necessarily reflect actual field conditions.

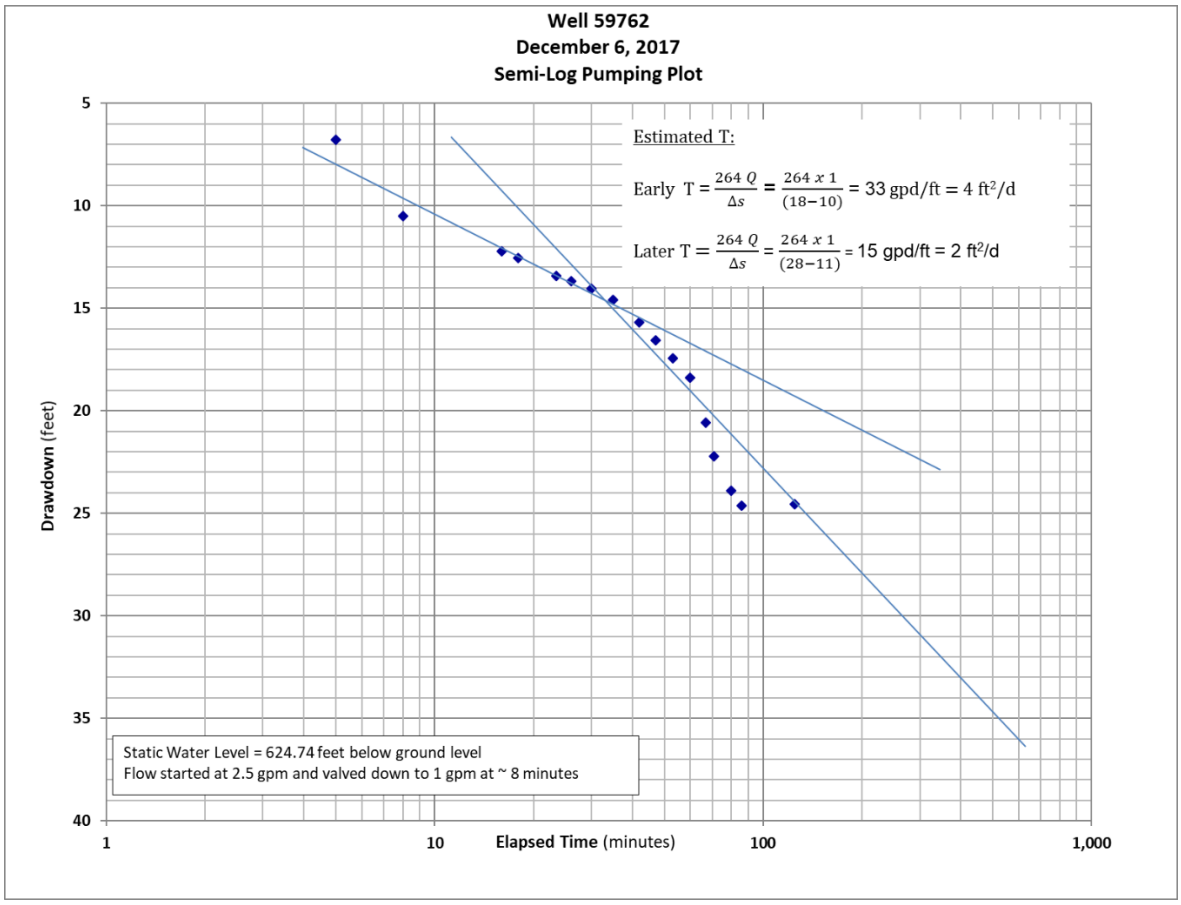


Figure 33. Well 59762 aquifer test pumping analysis

Recovery was monitored through December 28, 2017. Water level in the well recovered to static conditions within approximately one day. Analysis of the recovery data (Figure 34) suggests an early- to middle-time transmissivity on the order of approximately 30 gpd/ft (or 4 ft^2/d), consistent with the drawdown estimate. The effective transmissivity is likely less than 4 ft^2/d based on the apparent negative boundary noticeable in the drawdown and recovery data. The late-time recovery response suggests a transmissivity of approximately 5 gpd/ft (0.7 ft^2/d).

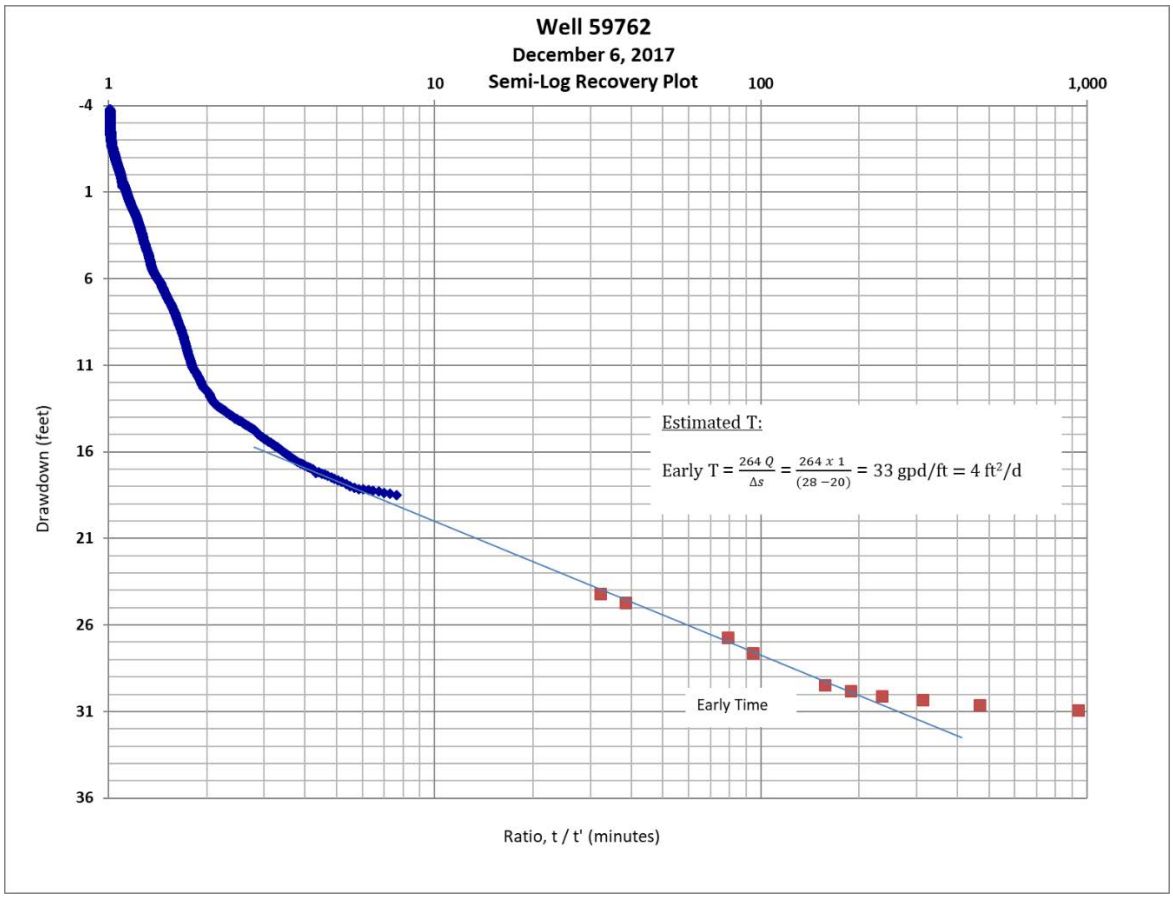


Figure 34. Well 59762 aquifer test recovery analysis

4.8.2.2 GMW17-32

Well GMW17-32 was installed in November 2017 to a depth of 718 feet bgs and screened from 678 feet to 718 feet bgs in alternating layers of tuff, arkose, siltstone, and clay. The lithology is moderately to highly silicified from a depth of 150 feet to 550 feet with trace or weak silicification above and below this zone. The borehole was initially advanced to 1,004 feet bgs but did not remain open for installing the well to this depth.

Well GWM-17-32 was tested on December 11, 2017. The static water level immediately before testing was 648.48 feet[9] bmp. The pump intake was set at approximately 717 feet bmp. The initial pumping rate of approximately 2.5 gpm was reduced to 1 gpm due to excessive drawdown in the well to near the pump intake.

A semi-log plot of the drawdown data is presented below as Figure 35. An aquifer transmissivity of approximately 5 gpd/ft (0.6 ft²/d) is estimated using the drawdown data and

[9] The water level in the well appeared to be recovering from previous short duration pumping events. Based on a longer period of recovery, the actual static water level may be closer to 635 feet bmp based on measurement on December 28, 2017.

a pumping rate of 0.9 gpm (water pumped from formation and not from casing storage). Assuming a saturated aquifer thickness of 200 feet would result in an estimated hydraulic conductivity of 0.003 ft/d. If only the screened interval contributed flow to the well with a saturated thickness of 40 feet, the assumed hydraulic conductivity would be 0.015 ft/d.

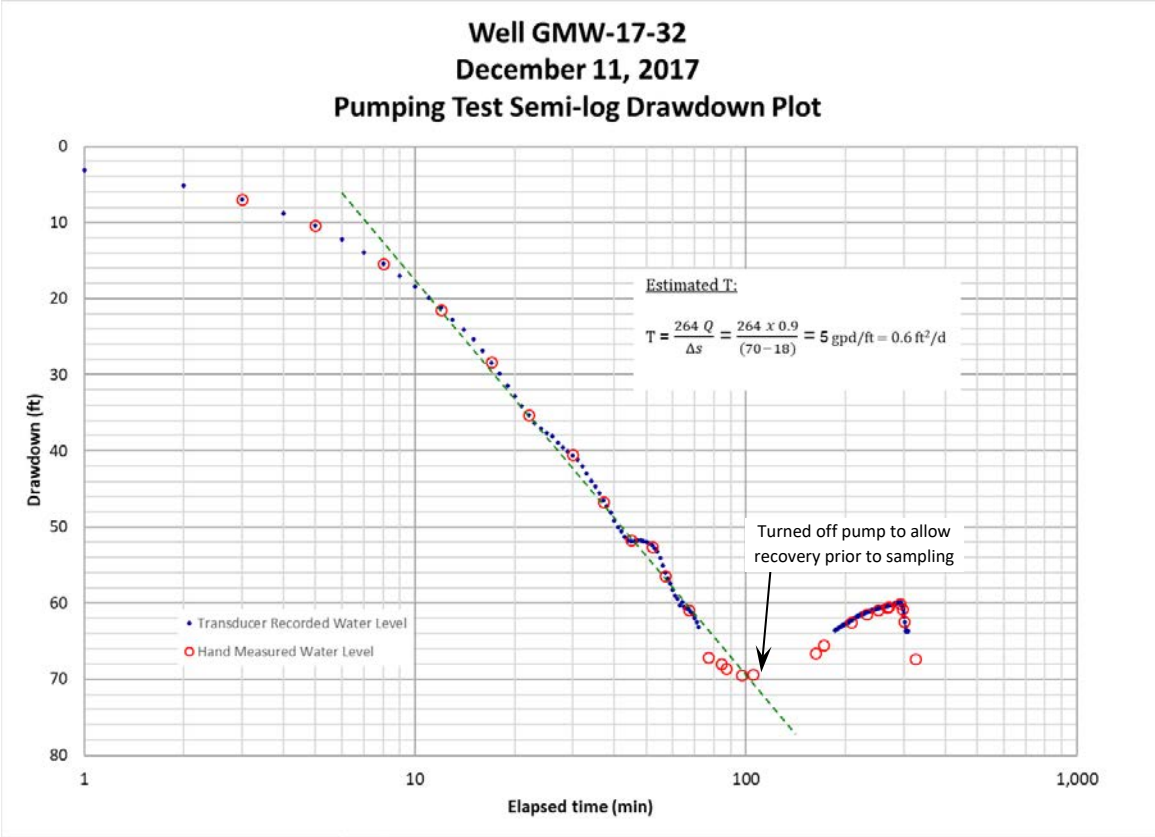


Figure 35. GMW17-32 pumping test semi-log drawdown plot

Figure 36 is a semi-log plot of the recovery data collected following the test pumping. An aquifer transmissivity of approximately 0.6 gpd/ft (0.08 ft^2/d) is estimated using the recovery data after approximately 200 minutes and an average pumping rate of 0.9 gpm. Assuming a saturated aquifer thickness of 200 feet would result in an estimated hydraulic conductivity of 0.0004 ft/d. Assuming a saturated thickness of 40 feet, the assumed hydraulic conductivity would be 0.002 ft/d.

Testing of this well suggests an aquifer transmissivity of between 0.6 to 5 gpd/ft and a hydraulic conductivity ranging from 0.002 to 0.015 ft/d (assuming only the screened interval is contributing flow to the well). The transmissivity and conductivity values are considered to be very low and are assumed to reflect the highly silicified nature of the aquifer materials.

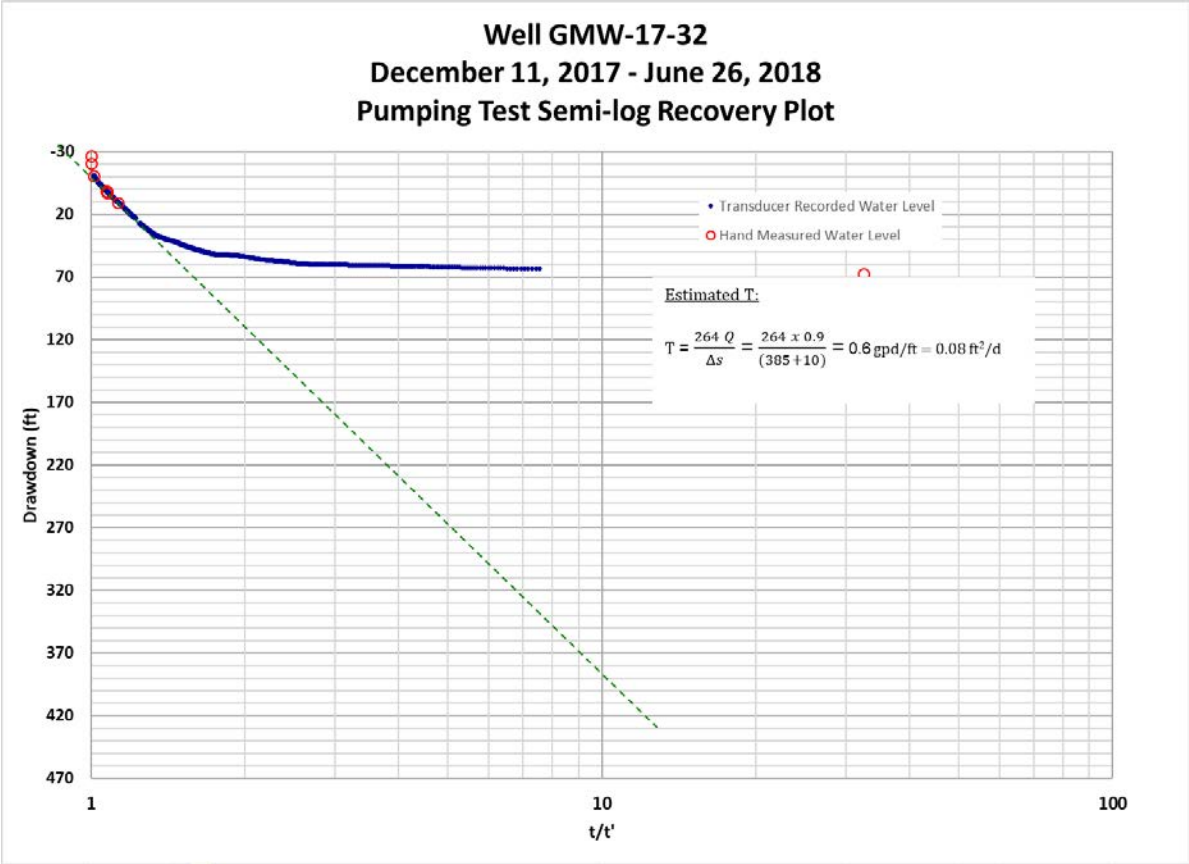


Figure 36. GMW17-32 pumping test semi-log recovery plot

4.8.2.3 GMW17-33

Well GMW17-33 was completed in November 2017 to a depth of 338 feet bgs, with screen placed from 238 feet to 338 feet bgs in alternating layers of sinter and silicified siltstone with traces of tuff and clay.

Well GMW17-33 was tested between December 14 and 18, 2017. The static water level was initially 244.13 feet bmp. The measurement point was approximately 1.06 feet above the 4-inch well casing. The pump intake was set at 338 feet bmp. The initial pumping rate was approximately 30 gpm. The rate was adjusted during periods throughout the pumping test in response to apparent negative boundary and increased drawdown effects. The final pumping rate was reduced to approximately 17.5 gpm, for an average pumping rate of 28 gpm over the pumping period. The total drawdown in the well at the end of the pumping period was approximately 46 feet.

The transmissivity obtained from a match to the early-time data (Figure 37) was approximately 620 gpd/ft (80 ft^2/d). Approximately 500 minutes into the pumping test, the drawdown appeared to stabilize for about 1 day, possibly attributed to delayed yield effects, followed by a negative boundary effect after approximately 3,200 minutes of pumping. The pumping rate was periodically decreased to prevent the drawdown from reaching the pump intake. The estimated hydraulic conductivity near the well is estimated to be approximately 0.4 ft/d (encountered within one day of pumping), assuming a saturated aquifer thickness of 200 feet. The hydraulic conductivity with distance from the well would be less based on increased and unsustainable drawdown effects.

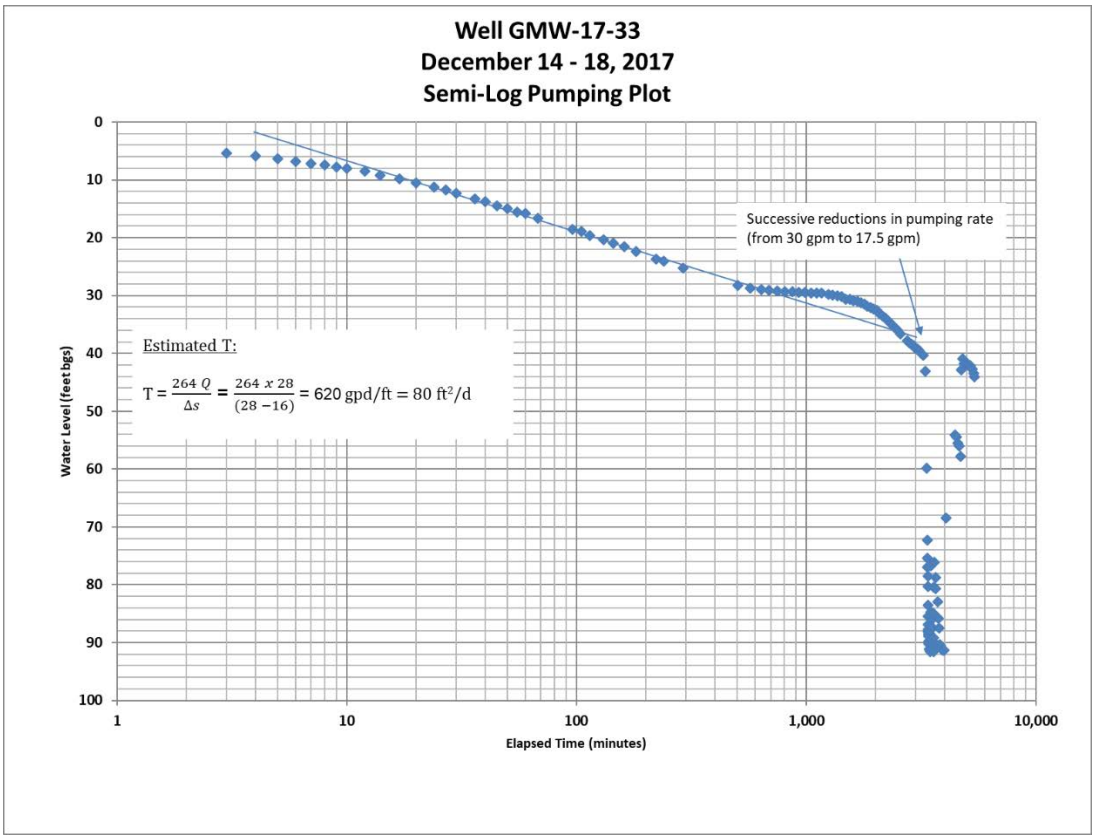


Figure 37. Well GMW17-33 aquifer test pumping analysis

Recovery monitoring was performed through December 28. An analysis of the recovery data (Figure 38) suggests an early-time transmissivity of 7,400 gpd/ft (1,000 ft^2/d) and a late-time transmissivity, reflecting the negative boundary condition, of approximately 280 gpd/ft (40 ft^2/d). The recovery data indicate an estimated hydraulic conductivity of 0.2 ft/d based on the late-time transmissivity and assuming a saturated aquifer thickness of 200 feet.

The non-linearity of the semi-log plot between early time and late time periods suggests the overall flow regime is not consistent with a two-dimensional (i.e., radial) flow regime. This response supports a dual porosity concept (i.e., compartmentalization of the aquifer, with higher versus lower permeability zones). This appears to be primarily related to silicification of the formation surrounding this well. Figure 18, showing GMW17-33 along with the CSAMT geophysical survey, indicates that the well is completed in less- or un-silicified material surrounded by more silicified formation. A cross section of this well with the CSAMT survey data (Line 10) is provided as Figure 20.

During testing of GMW17-33, the more permeable aquifer materials that the well targeted appear to have been dewatered, causing the observed decline in transmissivity. The much less permeable materials on the periphery of the target zone could not supply enough water to sustain the pumping rate and significant drawdown was observed. It is reasonable to

assume that any required dewatering of similar water-bearing zones in the proposed Grassy Mountain Mine would follow a similar pattern.

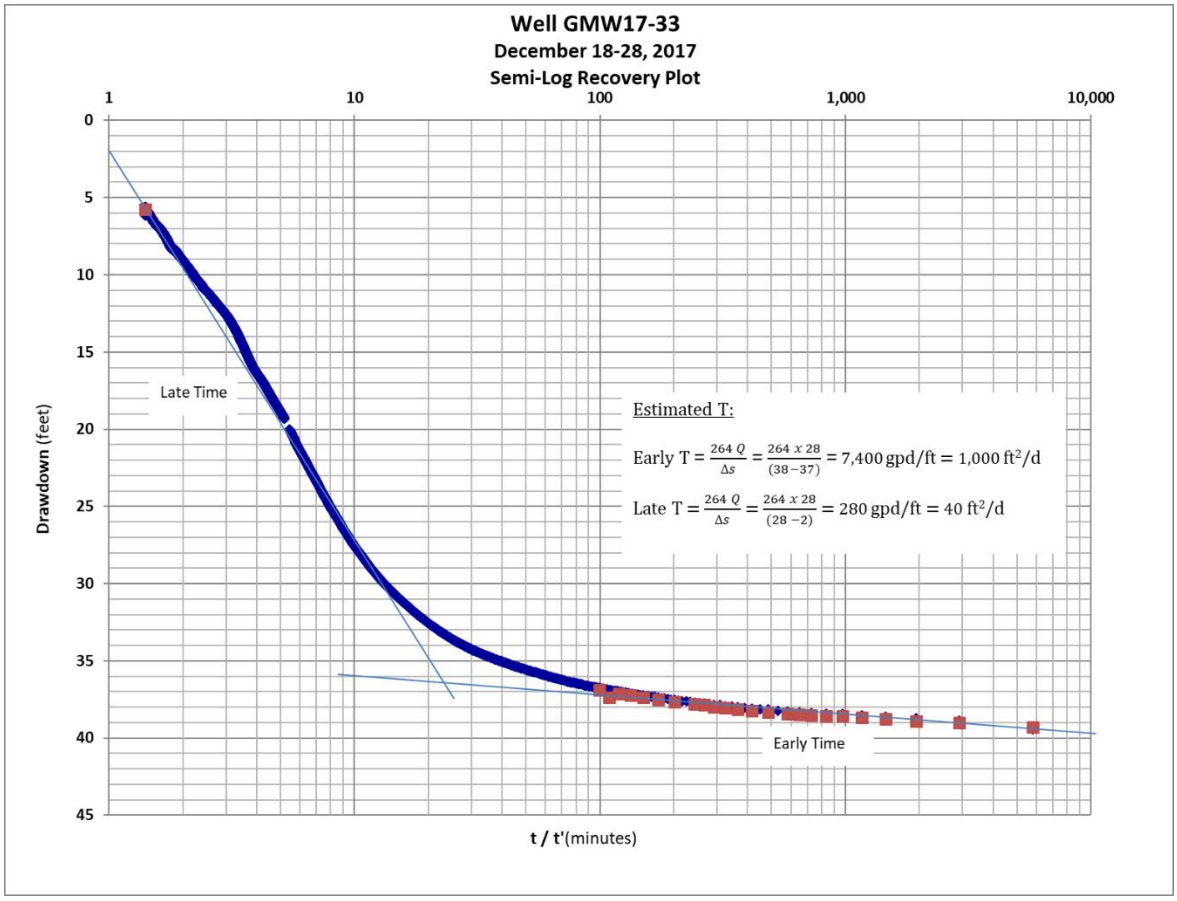


Figure 38. Well GMW17-33 aquifer test recovery analysis

4.8.2.4 Conclusions

Overall, the historic and recent aquifer testing (i.e., PW-1, PW-4, Prod-1, GMW17-33) indicates that portions of the regional aquifer with higher transmissivity occur locally in proximity to the wells and that, as testing progresses over time, lower transmissivity regions are encountered based on negative boundary effects. These results suggest the conductive portions of the aquifer system are either compartmentalized or limited, with flow provided to wells initially via permeable zones (i.e., sand, sandstone, fractured basalt, etc.) that are limited in spatial extent. With longer pumping, the radius of influence from testing expands and intercepts predominantly lower permeability deposits (i.e., arkosic sandstone, silicified sediments, competent bedrock, faults as hydraulic barriers, etc.).

Hydraulic conductivity in the of the proposed Grassy Mountain Mine increases moving north away from the deposit area, likely due to aquifer decreasing influence of silicification.

Testing of the most northern well, PW-4, suggests a hydraulic conductivity of approximately 3 ft/d. PW-4 is completed in un-silicified sandstone and conglomerate. The deep wells 59762 and GMW17-32 exhibit low transmissivity and hydraulic conductivity assumed to be representative of the silicified sediments at or near the deposit area, with hydraulic conductivities ranging from 0.0004 ft/d (GMW17-32) to 0.02 ft/d (59762). Results of packer testing at drill hole GM19-37 (discussed below) located within the mine deposit fell within this range, with a conductivity value of 0.004 ft/day. Estimates of hydraulic conductivity are sensitive to the assumed saturated aquifer thickness, with lower values obtained for thicker saturated aquifer extents. For the deep wells, the aquifer thickness is difficult to estimate as there is no information from drilling or lithology to develop an estimate. Based on previous investigations, aquifer thickness typically has been assumed to be on the order of 200 feet to 300 feet.

Drilling, test pumping, water level monitoring, and geophysical data all indicate that average hydraulic conductivities and corresponding aquifer transmissivities in the vicinity of the deposit area are very low. As a result, groundwater inflows to proposed mine workings should also be low.

4.8.3 Packer Testing Drill Hole GW19-37 and Secondary Porosity from Fracture Flow

Limited data on aquifer properties were available within the mine deposit prior to the packer test performed by Lorax Environmental on GW19-37 in October of 2019. The elevation at the surface of GM19-37 is 3922 ft msl and the packer test was performed between 404 and 433 ft bgs. Drill hole inclination is 70° which puts the elevation of the packer test between the approximate elevations of 3529 and 3515 feet msl. Hydraulic conductivity was calculated using Hvorslev, 1951. An estimated value of 0.004 ft/day or a transmissivity of 0.8 ft^2/day was determined assuming a saturated thickness of 200 feet (Lorax 2020).

With the limited hydraulic data available in the deposit area, the geotechnical core logging data for GM19-37 was compared to other drill holes to determine the likelihood of similar hydraulic conductivity values. Geotechnical data are included in Golder Associates (2018) and GMS (2020). Characteristics such as fracture frequency, joint conditions, rock quality designation, and rock strength were evaluated by Golder Associates to determine a rock mass rating (RMR). Based on all of these characteristics, RMR is divided into a ranking system with five categories:

1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor

The RMR of 27 drill holes were evaluated and the cumulative RMR for drill holes indicated that a majority of core was categorized as “Fair” (49%) or “Poor” (38%). The remaining 13% were identified as either “Very Good”, “Good”, or “Very Poor”. The entire length of core for

GM19-37 was consistent with other boreholes with 45% “Fair” and 37% “Poor”. The packer test at GM19-37 was performed between 404 and 433 feet and this section of core is described as both Fair and Poor. Therefore, it is assumed that the hydraulic conductivity determined by the packer test is reasonably representative of the mine area as a whole. Given the high degree of silicification around the deposit area, groundwater flow in this area is mostly likely by way of flow through joints and fractures in the rocks The locations of GM19-37 and the 26 other drill holes are presented in Figure 39.

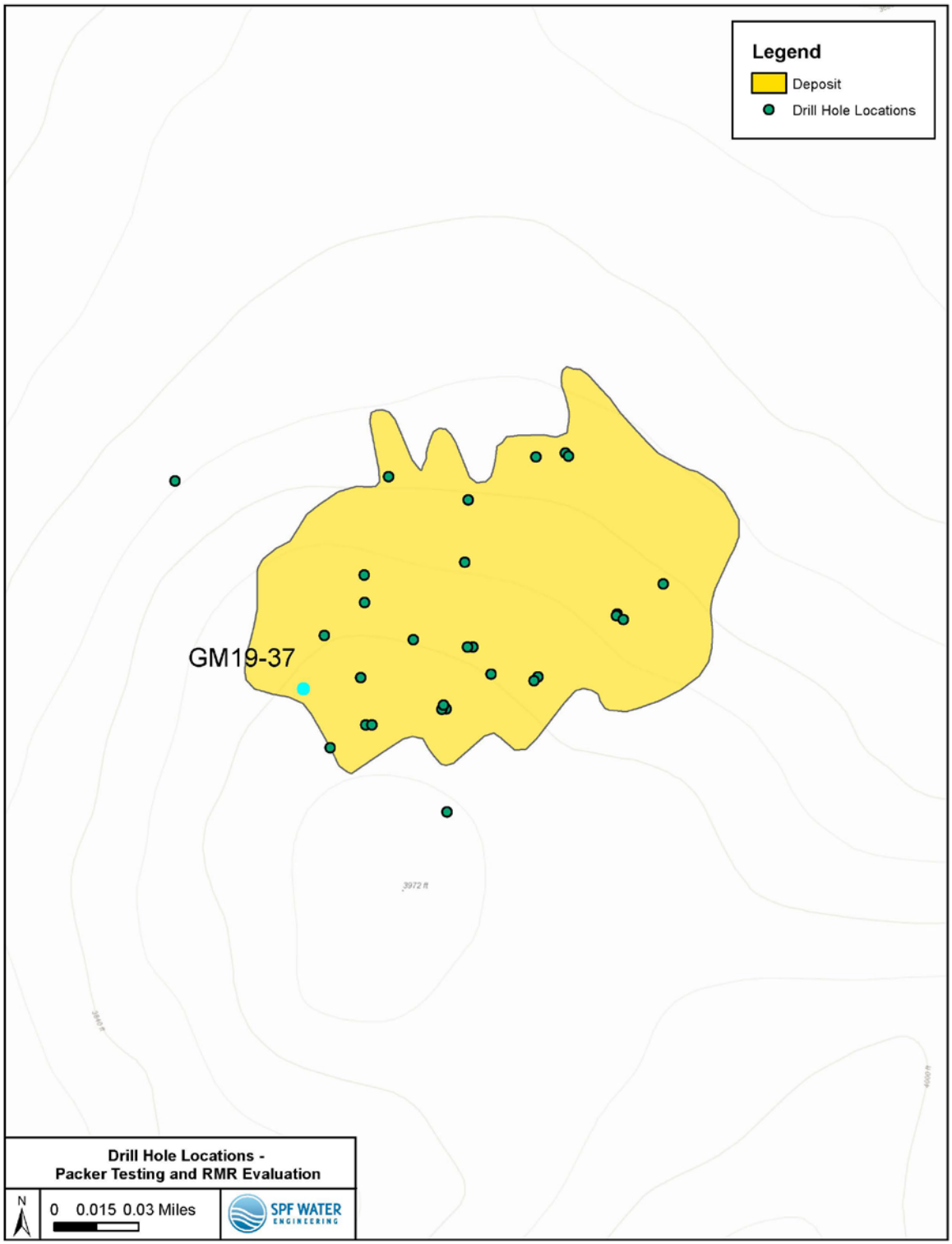


Figure 39. Drill Hole Locations for Packer Testing and RMR Evaluation

4.9 Water Balance

A water balance is determined from the amount of groundwater recharge derived from infiltration during precipitation events and inflow from surface water and groundwater minus the amount of evapotranspiration and outflow from surface water and groundwater, accounting for any changes in storage (Fetter, 1980). Available information to date on the water balance for the Grassy Mountain vicinity is largely based on previous investigations. The basis for the water balance has been derived from hydrogeologic conceptual models for similar basins located in other, semi-arid regions in the western US and from previous numerical modeling efforts performed for Grassy Mountain (ABC, 1992).

4.9.1 Recharge

Annual recharge to groundwater in the vicinity of Grassy Mountain was estimated by others to be in the range of 0.25 to 1 inch based on climatic and topographic conditions (ABC, 1992). Assumptions made regarding the potential range of recharge is discussed further in section 3.2 of the *Dewatering Projections and Evaluation of Potential Pumping Impacts, Grassy Mountain Gold Project* (SPF, 2021b). These values were supported by ABC's numerical groundwater flow model of Grassy Mountain, with an assigned recharge rate of 0.5 inches per year (ABC, 1992). The total annual precipitation for the area is approximately 10 inches, mostly as snow during winter, with higher precipitation amounts between November and May (around one inch each month) compared to hotter, drier summer months and shoulder seasons between June and October, typically a few tenths of an inch as shown in Table 8 below (WRCC, 2017).

OWYHEE DAM, OREGON													
NCDC 1981-2010 Monthly Normals	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Precipitation (in.)	0.92	0.76	0.89	0.96	1.16	0.92	0.43	0.38	0.45	0.64	0.92	1.25	9.68

Table 8 . Owyhee Dam Mean Precipitation

Data was also obtained from the Kelsey Butte weather station to help confirm this amount of precipitation for more recent years and at higher elevation than the Owyhee Dam as show in Figure40 below (Meso West 2019).

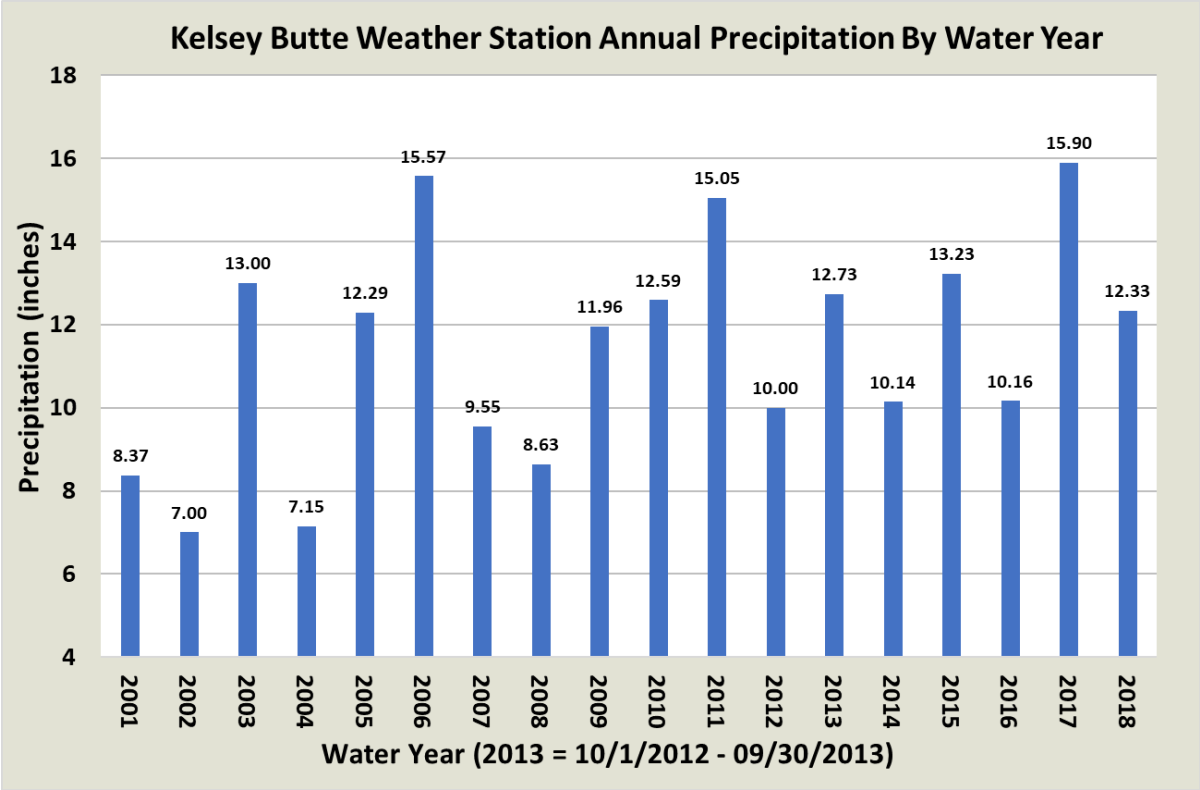


Figure40. Kelsey Butte Weather Station Annual Precipitation

Figure A2 in Appendix A shows surficial geology (Ferns 1993) along with the surface water hydrologic unit borders. Southeast of the proposed Grassy Mountain Mine, Grassy Mountain serves as the hydrologic divide between Negro Rock Canyon and the Owyhee River. It is assumed that this divide generally applies to both surface water and groundwater. The Negro Rock Canyon drainage flows into Sand Hollow and ultimately into the Malheur River near Vale, Oregon.

While topography identifies Grassy Mountain as the hydrologic divide, surficial geology also suggests that the groundwater divide is near Grassy Mountain. The contact between the Grassy Mountain Formation (unit *Tsau*) and the underlying Tuff of Kern Basin (unit *Ttkb*) surfaces on Grassy Mountain just to the south of the topographic divide. The Grassy Mountain Formation dips towards the north, in the direction of Negro Rock Canyon. The aquifer system in the vicinity of the proposed Grassy Mountain Mine occurs within the Grassy Mountain Formation, so any precipitation that falls on the contact or downgradient would be expected to recharge the aquifer. Figure A2 shows that the recharge area for the proposed Grassy Mountain Mine is relatively small, on the scale of 1 to 3 square miles.

4.9.2 Discharge

Grassy Mountain serves as the groundwater divide between Negro Rock Canyon and the Owyhee River, supported by topography and geology. Ultimately Negro Rock Canyon

discharges to the north to the Malheur River. While the Owyhee Reservoir and Owyhee River are the predominant regional drainage features near the proposed Grassy Mountain Mine, regional groundwater flow is to the north towards the Malheur River.

Locally, ephemeral reservoirs (including Schweizer Reservoir, Grassy Mountain Reservoir, and Grassy Reservoir) and ephemeral streams provide surface water discharge for the area (JMM, 1991).

Springs are local discharge features for groundwater that may result from the contact between lithologic units with different permeabilities or may be associated with faults, joints, or fractures (Fetter, 1980). Within the Grassy Mountain vicinity, numerous individual springs (some ephemeral) have been identified and have been monitored for flow and water quality during investigations for baseline and background characterization purposes. The majority of springs have measured flow rates of less than one gpm, although the flow rate in several springs have been measured over 1 gpm. The discharge from monitored springs located on the north side of the Grassy Mountain hydrologic divide is on the order of approximately 30 gpm based on flow measurements collected between 2013 and 2017. There are additional springs farther downgradient that were not monitored for flow that could also serve as regional groundwater discharge points. The total aggregate visible groundwater discharge is an indicator of the low annual recharge rate.

5 WATER QUALITY

5.1 Baseline Groundwater Quality Monitoring

5.1.1 Monitoring Wells

Quarterly groundwater quality data were collected from 12 monitoring wells between the 1st Quarter of 2013 and the 3rd Quarter of 2014. The new monitoring wells GMW17-32 and GMW17-33, plus the pre-existing well 59762, were sampled once[10] for water quality in accordance with the Final Work Plan for Grassy Mountain Monitoring Wells (SPF, 2016b).

A list of wells, locations, construction details, sampling protocols, water quality data, and QA/QC results are presented in the groundwater baseline report (SPF, 2019). The baseline sampling of the wells indicate that the area groundwater does exceed primary and secondary maximum contaminant levels (MCLs) for drinking water. These analytes include arsenic, antimony, and lead for the primary standards and aluminum, iron, manganese, total dissolved solids (TDS), and sulfate for the secondary standards.

[10] GMW17-32 was actually sampled for water quality three times, but only the third and final results are considered baseline data and occurred after significant re-development of the well.

Arsenic is the most common analyte to exceed a primary MCL. All fifteen (15) of the wells sampled produced groundwater that exceeded the MCL of 0.010 mg/L. The wells and the range in total arsenic values are listed below:

- 59760 (between 0.0245 – 0.0283 mg/L).
- 59761 (between 0.0219 – 0.0244 mg/L).
- 59762 (between 0.163 mg/L) on December 16, 2017.
- 59763 (between 0.0600 – 0.0787 mg/L).
- 59766 (between 0.01847 – 0.0276 mg/L).
- 59772 (between 0.0348 – 0.038 mg/L).
- Bishop (0.0101 mg/L, total only) on September 15, 2014.
- BLM (between 1.54 – 4.63 mg/L).
- GMW17-32 (0.0799 mg/L) on December 5, 2018.
- GMW17-33 (0.107 mg/L) on December 14, 2017.
- GW-1 (between 0.0268 – 0.0313 mg/L).
- GW4 (between 0.0111 – 0.0126 mg/L).
- Prod-1 (between 0.0579 – 0.0615 mg/L).
- PW-1 (between 0.0282 – 0.0331 mg/L).
- PW-4 (between 0.0148 – 0.0221 mg/L).

Total arsenic concentrations more than three times the 0.010 mg/L MCL are common in groundwater within the basin (Figure 41). This figure represents the most recent measured arsenic concentration in each well. The presence of naturally-occurring arsenic in groundwater at concentrations above the MCL have an association with some felsic volcanic rocks and mineralized areas (Welch, et. al., 2000). The ore body at Grassy Mountain would constitute a mineralized zone.

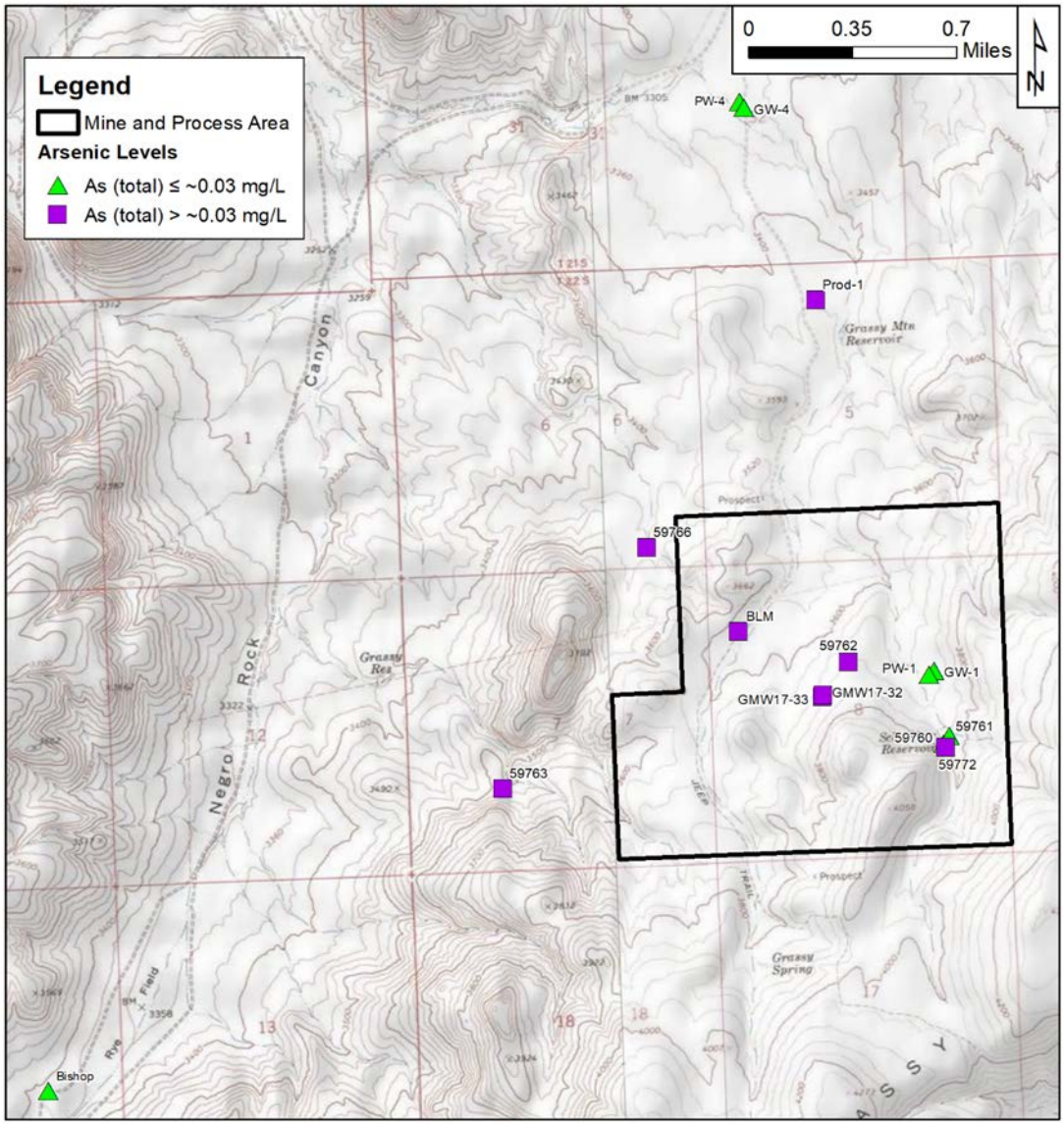


Figure 41. Total arsenic concentration distribution in groundwater

Antimony was detected at above the drinking water MCL of 0.006 mg/L at the following well locations:

- 59762 (0.21 mg/L total and 0.298 mg/L dissolved) on December 12, 2017.
- GMW17-32 (0.0374 mg/L total and 0.0371 mg/L dissolved) on December 15, 2018.
- GMW17-33 (0.0244 mg/L total and 0.0217 mg/L dissolved) on December 14, 2017.

These wells are located just downgradient of the deposit area. Antimony has been detected in other wells at concentrations below the MCL (less than 0.002 mg/L)

Chromium was initially detected above the MCL (0.1 mg/L) in GMW17-32, but after redevelopment was below the MCL. Chromium was also detected (below the MCL) at other sampled locations within the Grassy Mountain vicinity, including 59760, 59761, 59763, 59766, 59772, GW-4, PW-1, and PW-4 at concentrations ranging from 0.0005 mg/L to 0.0017 mg/L, suggesting the presence of a naturally occurring source for chromium at low concentrations.

Lead was detected above the MCL (0.015 mg/L) on the initial sampling events of GMW17-32 and 59766. On subsequent sampling events, the lead concentration remained under the MCL.

5.1.2 Springs

Quarterly water quality data were collected from up to 11 baseline springs between the 1st Quarter of 2013 and the 3rd Quarter of 2014. A list of springs, locations, sampling protocols, water quality data, and QA/QC results are presented in the groundwater baseline report (SPF, 2019). The baseline spring sampling indicate that the area groundwater does exceed primary and secondary maximum contaminant levels (MCLs) for drinking water. These analytes include arsenic for the primary standards and aluminum, manganese, and TDS for the secondary standards.

Arsenic was the only constituent with reported concentrations above a primary MCL at sampled spring locations. Arsenic was detected above the MCL at seven of the ten sampled spring locations:

- Deposit Stock Tank (0.025 – 0.031 mg/L),
- Poison Spring (0.033 – 0.040 mg/L),
- Sourdough Spring Lower (0.023 – 0.026 mg/L),
- Sourdough Spring Upper (0.027 – 0.032 mg/L),
- Twin Springs North (0.042 – 0.061 mg/L)
- Twin Springs South (0.040 – 0.049 mg/L), and
- Whiskey Spring (0.082 – 0.100 mg/L).

The range in arsenic concentrations was relatively consistent at all detected locations (i.e., on the order of approximately 0.020 to 0.030 mg/L). The highest detections were reported at Whiskey Spring (on the order of approximately 0.080 to 0.100 mg/L). Arsenic was not detected above the MCL at Government Corral Spring, Sagebrush Spring, or Lowe Spring.

5.2 Geochemical Characteristics

Geochemical characteristics of the groundwater (wells and springs) were evaluated using Trilinear diagrams and Stiff diagrams, with major ions expressed as meq/L. These diagrams are useful for evaluating the geochemical signature of the water, to illustrate general differences in water chemistry using major ions, and to group waters with similar chemical signature into identifiable groups (or hydrochemical facies). Geochemistry results from all of the sampled springs and wells are presented in the groundwater baseline report (SPF, 2019).

5.2.1 Well Geochemical Characteristics

The predominant hydrogeochemical facies noted for groundwater sampled from wells within the Grassy Mountain project vicinity include:

- Calcium bicarbonate (Ca-HCO3) for 59760, 59761, 59722, and GW-1.
- Sodium-potassium bicarbonate (Na/K-HCO3) Bishop, GW-4, Prod-1, and PW-1.
- Sodium-potassium sulfate (Na/K-SO4) for 59763, 59766, BLM, 59762, and GMW17-32.

A fourth water quality type (calcium-sulfate, Ca-SO4) was previously described for wells GW-3 and GW-5 based on historical sampling events (JMM, 1991). A calcium-sulfate water type has not been observed elsewhere based on subsequent sampling events.

A map of each of the wells and its associated geochemical signature is included as Figure D-1 in Appendix D. The predominant water types appear to have a spatial distribution attributed to local geologic conditions and areas of recharge/discharge. Predominantly Ca-HCO3 water types are noted in wells to the east of deposit area that are generally completed in basalt. Groundwater sampled from wells located directly downgradient of the deposit area and near silicified sections of the aquifer appear to exhibit Na/K-SO4 water types. The rest of the wells located in the Grassy Mountain Formation downgradient of the deposit area and away from silicified zones exhibit Na/K-HCO3 water types. The presence of calcium may be attributed to areas with basalt deposits, and sodium may be associated with volcanic tuff and sedimentary deposits. Sulfate may be associated with areas immediately downgradient of the ore body and potentially attributed to longer residence times due to lower hydraulic conductivity and/or oxidation and leaching of the ore deposit (ABC, 1992).

In addition to wells downgradient of or within the ore body being a Na/K-SO4 facies (BLM, 59766, GMW17-32, GMW17-33, 59763, and 59762), these wells all had elevated values of arsenic, iron, manganese, boron, molybdenum, and nickel (Figure 42) relative to other baseline monitoring locations. These constituents are known to leach from ore and waste rock from the deposit, based on geochemical analyses (SRK, 2021). The pH at the BLM well and to a lesser degree at 59766 is also slightly depressed relative to other monitoring locations (6 to 7.9 versus typically >8). The unique geochemical signature at these wells (the particular suite of elevated constituent concentrations and sometimes depressed pH) indicates an influence on water quality down-gradient from the deposit minerals, influencing baseline water quality conditions in and down-gradient of the ore deposit.



*Detections below reporting limit averaged using reporting limit value.

Figure 42. Average Metal Concentration 2013-2018

Wells PW-1 and GW-1, despite being fairly close together, exhibit different geochemical signatures. GW-1 is screened in shallow gravel deposits and exhibits a Na/K-HCO3 water type like the wells farther downgradient of the deposit area. PW-1 is screened deeper in unconsolidated clay and sand and sandstone. PW-1 produces groundwater with a Ca-HCO3 signature, like the up-gradient wells completed in basalt.

Deeper wells (59762 and GWM17-32) suggest a predominant Na/K-SO4 water type that is also apparent at shallow well locations (i.e., BLM, 59763, and 59766) hydraulically downgradient of the deposit area. This suggests downward migration of groundwater within the silicified zone.

5.2.2 Spring Geochemical Charactersitics

Three predominant hydrogeochemical facies are apparent based on sampling events performed during 2013 and 2014 at spring locations:

- Sodium-potassium bicarbonate (Na/K-HCO3) for Poison Spring, Sourdough Springs (lower and upper), Twin Springs (North and South), and Lowe Spring.
- Calcium bicarbonate (Ca-HCO3) for Government Corral Spring, Sagebrush Spring, and Deposit Stock Tank.
- Sodium-potassium sulfate (Na/K-SO4) for Whiskey Spring.

A map of each of the springs and its associated geochemical signature is included as Figure D-2 in Appendix E. An apparent spatial distribution is noted at certain spring locations. For example, springs with a dominant water type Ca-HCO3 (including Government Corral Spring, Sagebrush Spring, and Deposit Stock Tank) are located primarily north and northeast of the proposed Grassy Mountain Mine. Like the wells that have a Ca-HCO3 signature, Government Corral Spring, Sagebrush Spring, and Deposit Stock Tank are located near volcanic formations. A Na/K-HCO3 water type is the most prevalent signature from springs in the area and appears to be representative of the main regional flow system. A Na/K-SO4 water type is apparent at Whiskey Spring.

Whiskey Spring is located approximately 4 miles southeast of the proposed Grassy Mountain Mine on the south side of Grassy Mountain. However, the Whiskey Spring arsenic concentrations were on the order of two times higher than the concentrations observed at any other spring. Whiskey Spring appears to be flowing out of the *Tas* geologic formation, the arkosic and tuffaceous sandstone underlying the Kern Basin Tuff formation. The elevation of this spring is approximately 3,225 feet amsl, which is higher in elevation than some of the deeper well water levels located near the mine. The water for this spring may have flowed through a separate mineralized zone in the area.

5.2.3 Interpretation of Groundwater Geochemical Characteristics

Figure D-3 in Appendix D maps the geochemical signature of both the wells and the springs. This figure suggests that the aquifer to the east and northeast of the deposit area generally has a Ca-HCO3 signature, likely associated with volcanics. The aquifer immediately downgradient of the deposit area is predominantly a Na/K-SO4 water type. The presence of

sulfate could be related to very low permeability near the deposit area and/or oxidation and leaching of sulfide minerals in the ore deposit (ABC, 1992).

Whiskey Spring exhibits geochemistry similar to the groundwater immediately downgradient of the deposit area, although several trace constituents observed in the wells downgradient of the mine are not elevated in the Whiskey Spring water (the exception being arsenic). This spring appears to originate where the Kern Basin Tuff surfaces. Even though this spring is at a higher elevation than the presumed water surface within the deposit area and in a different hydrologic basin, the groundwater appears to be influenced by the same type of silicification associated with the deposit area.

The groundwater located in the main regional flow system downgradient of the deposit area exhibits a Na/K-HCO3 chemistry. Sodium may be associated with volcanic tuff and sedimentary deposits.

Figure D-3 supports the idea of a single aquifer system, with chemistry influenced by lithology. Wells immediately downgradient of the deposit area exhibit the same geochemical signature and elevated leached metals and appear to be affected by the deposit characteristics, regardless of well depth. Groundwater farther from the proposed Grassy Mountain Mine also exhibits its own signature influenced by lithology, regardless of well depth.

Figure D-4 in Appendix E displays the trilinear diagrams of both the wells and springs for comparison purposes. It is apparent that as the groundwater moves away from the volcanic formations it tends to decrease in calcium concentration. The same is true with sulfate and the silicified areas of the Grassy Mountain Formation. The groundwater upgradient (or not in the downgradient path) of the groundwater flowing through silicified and mineralized sediments (Bishop, 59761, 59760, 59772, PW-1, and GW-1) has the least amount of sulfate. The groundwater downgradient of the silicified sediments (Prod-1, GQ-4, PW-4, GMW17-33) shows an increase in sulfate. Even though GMW17-33 is located near the deposit area, it is completed in the middle of what appears to be a section of unsilicified material (Figure 20). The wells located in silicified media appear to have the highest concentrations of sulfate and relatively the least desirable water quality from a drinking water standpoint. The trend of the cations presented on these trilinear diagrams indicates ground water movement throughout the aquifer system.

Looking at Figure D-4, it appears Well GW-4 and Poison Spring have a similar geochemical signature. Even though Lowe Spring, Government Corral, and Deposit Stock Tank are closer to GW-4, Poison Spring pairs better with the geochemical signature of GW-4. This suggests that Poison Spring could be connected to the deeper section of the aquifer while the other springs are discharge points for shallower less confined or perched sections of the aquifer.

6 GROUNDWATER CONCEPTUAL MODEL

The aquifer system in the vicinity of the Project occurs within the Grassy Mountain Formation, generally consisting of arkosic sandstone, siltstone, and conglomerate. The unit includes

interbedded fine-grained sediments. The Grassy Mountain Formation is the host unit for the proposed Grassy Mountain Mine. The unit is underlain by the Kern Basin Tuff, a fine-grained lithic tuff.

Groundwater is typically found within the Grassy Mountain Formation in unconsolidated or weakly consolidated sandstone and conglomerate units and interbedded sediments. The water-bearing zones appear to be somewhat compartmentalized due to faults, sedimentary facies changes, and silicification in and around the deposit area. Cross-sections developed from available subsurface lithology demonstrate the variability in water-bearing strata throughout the Project area.

Water levels in the area are typically stable, with some seasonal variations evident in shallow wells or wells otherwise subject to more direct recharge. There is some evidence of a general long term water level decline in the shallow aquifer zone at several wells in the vicinity of the proposed Grassy Mountain Mine, possibly due to inadequately sealed boreholes at or near the proposed Grassy Mountain Mine allowing shallow aquifer zones to drain to deeper zones. The observed decline is on the scale of a few feet over several years.

The Grassy Mountain Formation in and near the deposit area is silicified and strongly indurated. Geophysical data indicates that the zone of silicification increases to at least an approximate depth of 1,300 feet below ground surface (Figure 14). Based on available information, a saturated zone occurs within the deposit area at an elevation ranging from 3,300 to 3,100 feet, which is above the expected maximum depth of the proposed mine (approximately 3,050 feet). However, this zone does not appear to be consistent throughout the deposit area. Anecdotal evidence from exploratory drilling suggests the presence of isolated perched water-bearing zones above an elevation of 3,300 feet. These zones may be associated with less-silicified material with higher conductivity, and faults in these areas may act as conduits for groundwater flow.

While portions of the proposed Grassy Mountain Mine are understood to be saturated, hydraulic conductivity and resultant groundwater flow appear to be severely restricted by silicification and/or faulting. Testing of GMW17-32 completed in silicified sediments near the deposit area suggests a very low hydraulic conductivity on the order of 10^{-6} to 10^{-7} cm/s. A long recovery period after testing this well also is an indication of very low hydraulic conductivity. Given the location of the proposed Grassy Mountain Mine relative to the groundwater divide, the available groundwater recharge to the area appears to be limited as well.

The silicified nature and faulting of the sediments in and around the deposit area has a strong effect on hydraulic conductivity, but may also result in a strong downward vertical gradient within the aquifer system. This vertical gradient is theorized to result in the deeper potentiometric surface observed in deeper wells. The horizontal gradient in this area is also relatively high, consistent with flow impeded by low hydraulic conductivity, with silicification apparently being a major factor.

On the south and east sides of the proposed Grassy Mountain Mine, faults appear to act as barriers to groundwater flow, but the true impact of faulting on groundwater flow is hard to differentiate from the effects of deposit silicification. The silicification and faulting seems to decrease the hydraulic conductivity of the arkosic sandstone but potentially increase the hydraulic conductivity of the underlying tuff. It is possible with the combination of the silicification, steeply dipping interbedded clay, siltstone, and sinter, and the faulting near the proposed Grassy Mountain Mine allows some groundwater from the proposed Grassy Mountain Mine to flow into (or through) the tuff.

The conceptual model includes the assumption that some faults act as barriers (Figure 21) and some act as conduits to flow (Figure 29). The presence of barriers was a possible explanation to explain negative boundaries observed during pumping tests The presence of conduits is based on the more productive zones in the highly silicified area based on drilling evidence. The wells with higher productivity maybe intersecting faults that are acting as conduits for groundwater flow.

Monitoring well GMW18-34 was drilled to better understand the aquifer within the deposit area. This is a dry well and cannot be test pumped to understand the potential impacts of faults to groundwater flow. Further drilling, evaluation of core, and testing of hydraulic parameters may reveal more precise information on where faulting is limiting, enhancing, or having no effect on the flow of groundwater. However, the groundwater conceptual model and estimates of dewatering for mining are unlikely to change in a meaningful way.

The Kern Basin Tuff, like the Grassy Mountain Formation, surfaces at higher elevations on the southern and eastern sides of Grassy Mountain and dip towards the north and northwest directions towards Negro Rock Canyon.

Groundwater flow in the Project area is generally from the southeast to the northwest, from higher elevations along the base of Grassy Mountain to lower elevations along Negro Rock Canyon. This flow direction is evident in both the shallow and deep potentiometric surfaces, a result that also supports a single aquifer system.

Downgradient of the proposed Grassy Mountain Mine, the strata are less silicified, and the horizontal and vertical gradients are not as pronounced. It is still likely that horizontal and vertical connectivity between zones within the aquifer is affected by low permeability, discontinuous, interbedded layers of clay and siltstone, as well as faults. Hydraulic conductivity is higher downgradient of the proposed Grassy Mountain Mine, but lithologic variations and faulting affect groundwater flow and occurrence. Hydraulic conductivity values downgradient of the proposed Grassy Mountain Mine derived from test pumping are on the order of 10^{-3} cm/s to 10^{-5} cm/s, representative of sandstone and conglomerate aquifers. Consistent piezometric head in wells completed at different elevations would suggest a single aquifer system.

The Grassy Mountain fault zone extending north of the proposed Grassy Mountain Mine acts like a barrier to groundwater flow based on testing of nearby wells; the most productive wells in the area are presumably located on the east side of the Grassy Mountain fault zone.

Discharge of the regional aquifer is assumed to be local springs and ultimately the Malheur River. The low total aggregate spring discharge in the hydrologic basin suggests a low groundwater recharge.

While limited in spatial extent and hydraulic connectivity, the water-bearing zones within the Grassy Mountain Formation are proposed to constitute a single, heterogeneous and locally complex aquifer system. This conclusion is supported by lithology, piezometric surface, and geochemical signature. The aquifer system is defined by low hydraulic conductivity and high hydraulic gradient in and near the proposed Grassy Mountain Mine and higher hydraulic conductivity and lower hydraulic gradient away from the deposit area. Groundwater conditions appear to be mostly influenced by silicification and/or faulting near the deposit area and sedimentary facies changes and faulting downgradient of the deposit area.

The geochemistry of the groundwater appears to be strongly influenced by lithology. The main regional aquifer displays a Na/K-HCO3 geochemical identity, associated with volcanic tuff and sedimentary deposits. Groundwater originating from volcanics shows a Ca-HCO3 signature. Water chemistry in the immediate vicinity and downgradient of the silicified zone where the mineralized deposit is located has an Na/K-SO4 geochemical identity. Groundwater in the immediate area of the mine has not only higher sulfate, but also higher concentrations of arsenic, boron, iron, manganese, molybdenum, and nickel compared to baseline water quality data from the rest of the area. However, arsenic is considered elevated throughout the study area with all groundwater monitoring locations and most of the tested springs exceeding the drinking water standard for arsenic.

Deep groundwater beneath the deposit also has the Na/K-SO4 identity. This is either a result of deeper mineralization or vertical transport of groundwater downward from the mineralized area of the deposit.

7 POTENTIAL AQUIFER IMPACTS DUE TO GROUNDWATER PRODUCTION

While they are not issues related to or required for characterization of baseline conditions, this study includes a preliminary characterization of potential impacts due to groundwater production and mine dewatering as an initial step in assessing these important impacts. Further preliminary evaluation of these impacts is also presented in Volume 3 of the Groundwater Baseline Conditions Report (SPF, 2021b).

In the Water Resources Study Area, the main use of groundwater currently is watering of livestock and wildlife from springs. Water production for mine dewatering and mine raw and process water for the Project has the potential for impacting springs and groundwater levels in the area. This section describes a hydrogeological and two-dimensional analytical modeling approach for evaluating groundwater pumping on groundwater levels. A numerical model has also been developed to assess impacts, the results of which are presented in a separate report.

7.1 Mine Dewatering

In general, wells completed in the silicified formation encompassing the deposit area produce minor water (on the scale of 1 gpm) or are dry. Testing of wells (59762 and GMW17-32) completed in silicified sediments near the deposit area indicate very low transmissivity and hydraulic conductivity values. GMW17-33 is completed in an apparent isolated section of less silicified material. Testing of this well initially indicated somewhat higher transmissivity values, but as the cone of depression expanded, the drawdown significantly increased indicating a low transmissivity value in the surrounding media. During testing of these wells, no response was observed in any of the nearby monitoring wells, but a delayed response has been observed in GW-3 located west and away from the silicified proposed Grassy Mountain Mine.

Testing and the response in nearby wells suggest a heterogeneous system of low permeability and limited hydraulic connectivity. The dewatering required for the mining operation should be minor (tens of gallons per minute) given the characteristics of the proposed Grassy Mountain Mine, but there is the possibility of encountering compartmentalized zones of less silicified materials producing more water or faulting acting as conduits for groundwater flow. If such zones are encountered during the mining operation, higher dewatering flows may be required, but for a short duration (on the scale of days). Given the expected low dewatering requirements and silicified zones acting as hydraulic barriers, only minor impacts to the regional aquifer system are anticipated.

7.2 Production of Mine Process Water

Water is required for the Project for mining, ore processing, fire protection, potable uses, dust suppression, and various other uses. Raw water will be pumped from the groundwater wells to a raw water storage tank, and then piped for use at the Project. It is anticipated that dust suppression uses can be supplied directly from existing wells.

The anticipated total peak raw water demand in the summer when water cannot be reclaimed from the tailings storage facility is 200 gpm. During the rest of the year, the average annual daily demand is on the order of 50 gpm.

An aquifer test was performed on PW-4 from November 28 to December 4, 1989. PW-4 was pumped at a constant discharge rate of 145 gpm for 4,530 minutes (approximately 3.14 days) with water level measurements taken in PW-4 and nearby GW-4 during pumping and for approximately 4 days of recovery. The semi-logarithmic plots (Figure 43 &Figure 44) of the drawdown of both PW-4 and GW-4 indicate the cone of depression had reached a negative boundary at approximately 1,000 minutes pumping.

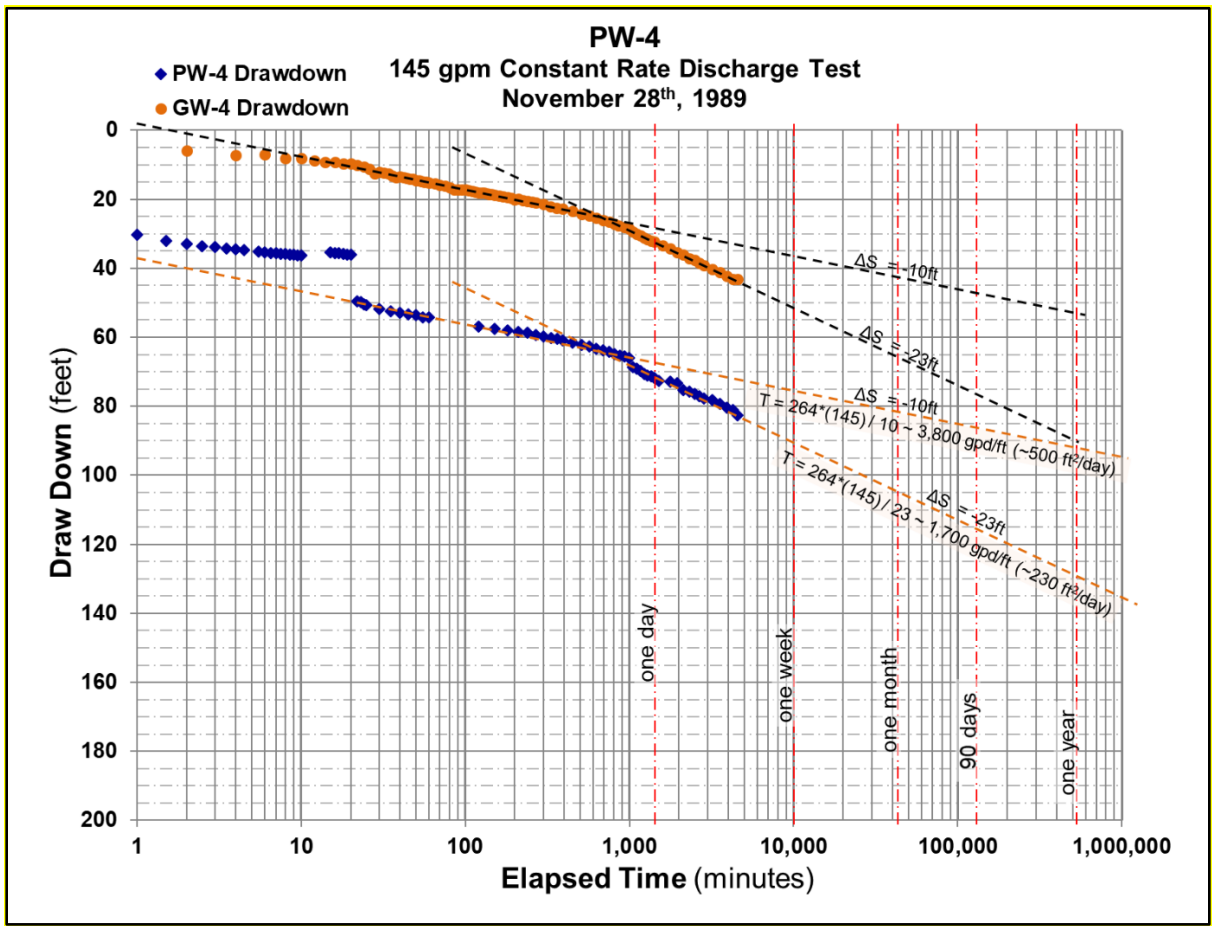


Figure 43. PW-4 Aquifer Test Semi-Logarithmic Plot

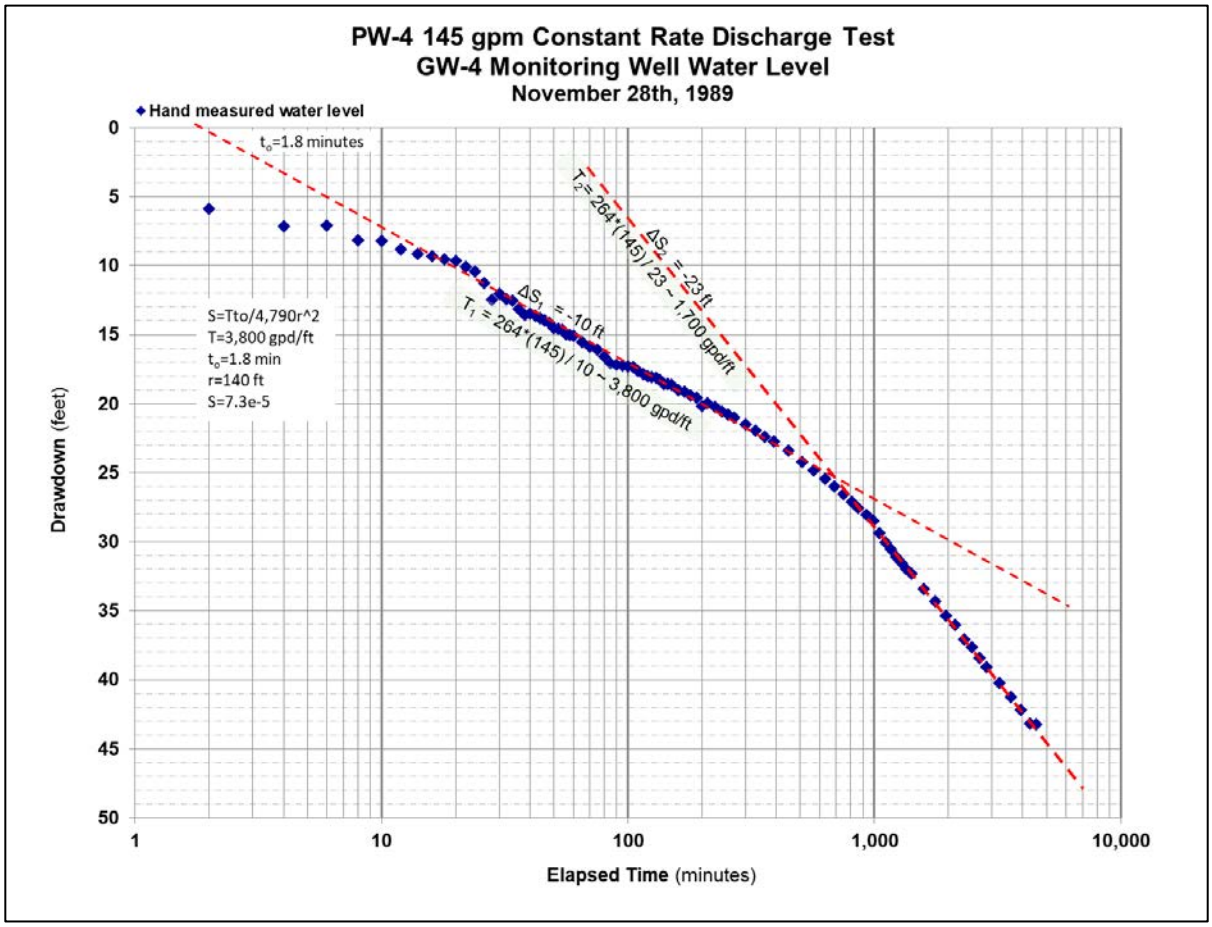


Figure 44. PW-4 Aquifer Test, GW-4 Drawdown

The flow and drawdown data from both wells were analyzed using the Cooper-Jacob straight line technique to obtain the near well transmissivity of approximately 500 ft^2/day and storativity value of approximately $7.0e^{-5}$. The initial 22 minutes of the test were not matched due to a large increase in drawdown due to what appears to be the flow being increased to 145 gpm. This storativity value is on the lower-end of the range for confined aquifers of 0.005 to 0.00005 (Freeze and Cherry, 1979).

Using these transmissivity and storativity values to calculate drawdowns at various times and distances using a Theis[11] analysis results in an unreasonably large area of influence. For

[11] The Theis method (Theis, 1935) is commonly used by hydrologists for evaluating potential impacts of groundwater pumping. Assumptions inherent to the use of the non-equilibrium Theis equation are that the aquifer is homogeneous and isotropic, uniform in thickness and with infinite areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow

example, predicted drawdown at a distance of one mile after one year of pumping at 320 gpm is 48 to 78 feet. In the instance of PW-4, however, the negative boundary shown in the drawdown data indicates compartmentalization of the aquifer. With the amount of complex faulting and variations in aquifer thickness and areal extent causing compartmentalization of the aquifer, it is more reasonable to expect a smaller area of influence but possibly a greater impact on groundwater levels in the near vicinity of the pumping well. It is also likely that drawdown from long-term pumping in the confined portions of the aquifer will induce leakage from unconfined portions of the aquifer with much higher storativity values. It is also possible that drawdown within the compartments will induce flow across boundaries from outside of the compartments, resulting in some drawdown outside of the compartments and decreasing drawdown within the compartments.

Under a compartmentalized aquifer scenario, where drawdown effects from confined aquifers eventually propagate upward into unconfined portions of the aquifer, the magnitude of drawdowns can also be qualitatively estimated based on pumping volumes. For example, assuming wells draw from one or more compartmentalized zones located within a circular area two miles in diameter centered on PW-4, the total area of the aquifers would be approximately 2000 acres. Further assuming pumping of 1 acre-foot per day (225 gpm) for 10 years, the total volume pumped would be 3,650 acre-feet. Lastly, assuming a specific yield of 0.10 for sediments within the zone of influence, the average drawdown would be 18 feet. Drawdowns would be greater near pumping wells and less at the margins of the compartmentalization. This analysis is not meant as a prediction of actual drawdowns, but rather to put the magnitude of potential drawdown in perspective. The actual extent of drawdown impacts cannot be predicted with existing data because the areal extent and geometry of the compartmentalized zones tapped by PW-4 or future production wells has not been determined. Future wells will be tested pumped for extended durations to evaluate aquifer sustainability and to access impacts on groundwater levels in the vicinity of the pumping wells.

An alternative method to evaluate the potential for pumping impacts on springs is by comparing geochemistry of individual wells and springs. PW-4 is located near (within 2 miles) of Poison Spring, Lowe Spring, Government Corral Spring, Deposit Stock Tank and Tank East of Negro Rock. There are multiple faults and lithologic facies mapped between these springs and PW-4. The geochemical characteristics of Sagebrush Spring, Government Corral Spring, and Deposit Stock Tank suggest that these springs originate from the volcanic sections of the aquifer, which is different from the geochemical characteristics in the area of PW-4. The different water chemistry, combined with mapped faults and lithologic facies changes, make it less probable that pumping near PW-4 would affect these springs. Poison Spring and Lowe Spring, however, have a similar geochemical signature as PW-4. This may suggest an increased chance of Poison Spring and Lowe Spring being affected by pumping near PW-4.

exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are never completely satisfied under field conditions.

Lastly, the location of springs provides insight into the potential for impacts due to construction of a well field in the vicinity of PW-4. Referring back to Figure 7, it seems unlikely that pumping in the vicinity of PW-4 will have a measurable impact on springs to the south of mine area such as Upper and Lower Sourdough Spring, Twin Springs, Whiskey Spring, Oxbow Spring, and Oxyoke Spring. These springs are five miles or more distant from PW-4. This distance, combined with known and unknown structural and lithologic barriers, should attenuate pumping impacts. In contrast, springs at distances of less than two miles from PW-4, such as Poison Spring, the Tank East of Negro Rock, and Lowe Spring, are more likely to be impacted by pumping in the PW-4 vicinity.

8 CONCLUSIONS

8.1 Aquifer System

The aquifer system within the Grassy Mountain Project Area is characterized by the following:

- Groundwater is found within permeable sediments and fractured rock within the Project Area. The Grassy Mountain Formation, consisting of arkosic sandstone, conglomerate, and tuffaceous siltstone is the primary water-bearing unit.

- Although there are different piezometric surfaces near and within the deposit area, available data suggest a single aquifer system with high vertical gradients in upland areas, including the vicinity of the deposit area.

- Groundwater elevations in most wells within the project area are relatively stable over time, based on a monitoring period that spans several years. Some wells show influence of seasonal recharge, particularly during periods of above average precipitation. Other wells show fluctuations attributed to groundwater pumping or to drilling activities.

- Groundwater flow is to the northwest, from areas of higher to lower ground surface elevation.

- Potentiometric surface maps based on wells and VWPs support a consistent flow direction without seasonally influenced variations. The pattern of groundwater flow shows local variations attributed to the presence of faults, fractures, lithologic facies changes, vertical gradients, or some combination of these influences.

- Aquifer hydraulic conductivity is low within the immediate vicinity of the Grassy Mountain ore body, attributed low permeability materials (i.e., clay and siltstone, competent bedrock, and silicified deposits). Faults appear to generally function as negative hydraulic boundaries. Spatially discontinuous aquifer zones with higher permeability are apparent, particularly to the north of the deposit area, based on

borehole drilling and aquifer testing. However, the apparent higher permeability is also thought to reflect compartmentalized aquifer conditions, within an overall aquifer of lower, aggregate permeability.

- The low hydraulic conductivity in the vicinity of the deposit area is anticipated to significantly restrict groundwater flows into underground mine workings. Groundwater supply for mining purposes will need to be developed away from the silicified zones in the proximity of the ore body.

8.2 Water Quality

- Arsenic is present in groundwater within the Grassy Mountain vicinity. Concentrations exceeded the drinking water MCL at all of the 15 sampled well locations and at 8 of the 11 sampled spring locations. Higher arsenic concentrations occur hydraulically downgradient of the proposed Grassy Mountain Mine and are likely due to mineralized areas associated with the ore body.

- Other exceedances of the drinking water MCL included antimony (two samples), chromium (one sample), and lead (two samples).

- Groundwater within the Grassy Mountain vicinity exhibits different water quality types (Ca-HCO3, Na/K-HCO3, or Na/K-SO4) based on spatial distribution, attributed to subsurface lithology/facies characteristics and proximity to the proposed Grassy Mountain Mine.

- Groundwater with the Na/K-SO4 signature are located within and downgradient of the mineralized zone that will be mined. The sulfate, as well as concentrations of other constituents including arsenic that are elevated compared to regional background, is likely due to oxidation of minerals in the ore deposit to be mined. One of the wells in this area (the BLM well) also exhibits a slightly lower pH (in the range of 6 to 7) than regional background (typically pH > 8).

8.3 Recommendations

Paramount, Calico and SPF recommend that baseline characterization efforts be considered complete based on the data compilation and results of investigations performed at the Grassy Mountain Project Area with respect to groundwater characterization.

While not related to baseline characterization, further characterization of impacts from mining such as drawdown due to pumping groundwater for makeup and also from dewatering the mine, is recommended. In addition, projections of impacts to groundwater quality and flow during the post-mining and closure period should be performed. Such characterization studies are currently underway.

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Appendix A
Regional Geologic Maps

Figure A1 Ferns, 1993, Excerpt from Geologic Map of the Vale 30 x 60 Minute Quadrangle, Malheur County, Oregon, and Owyhee County, Idaho

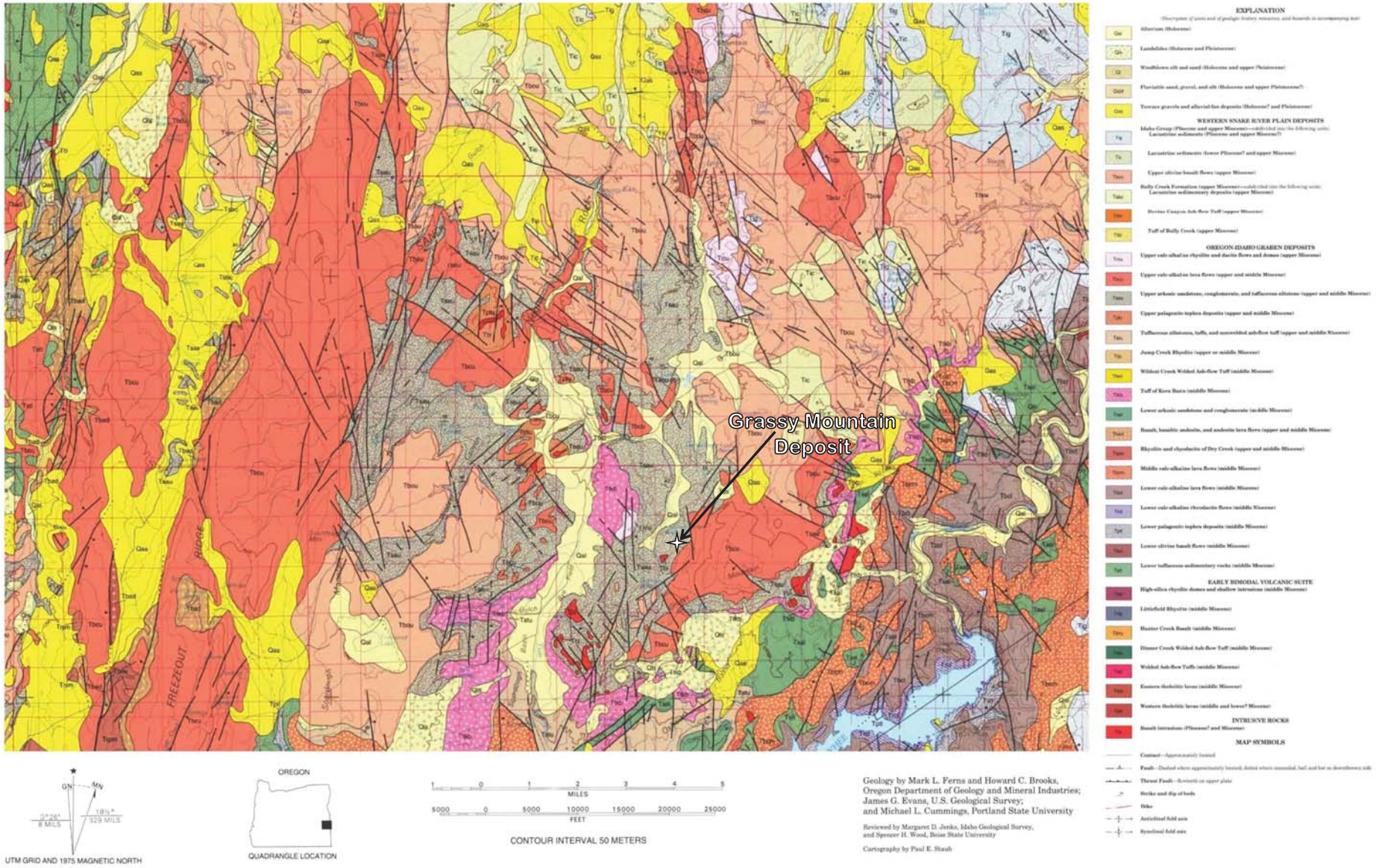
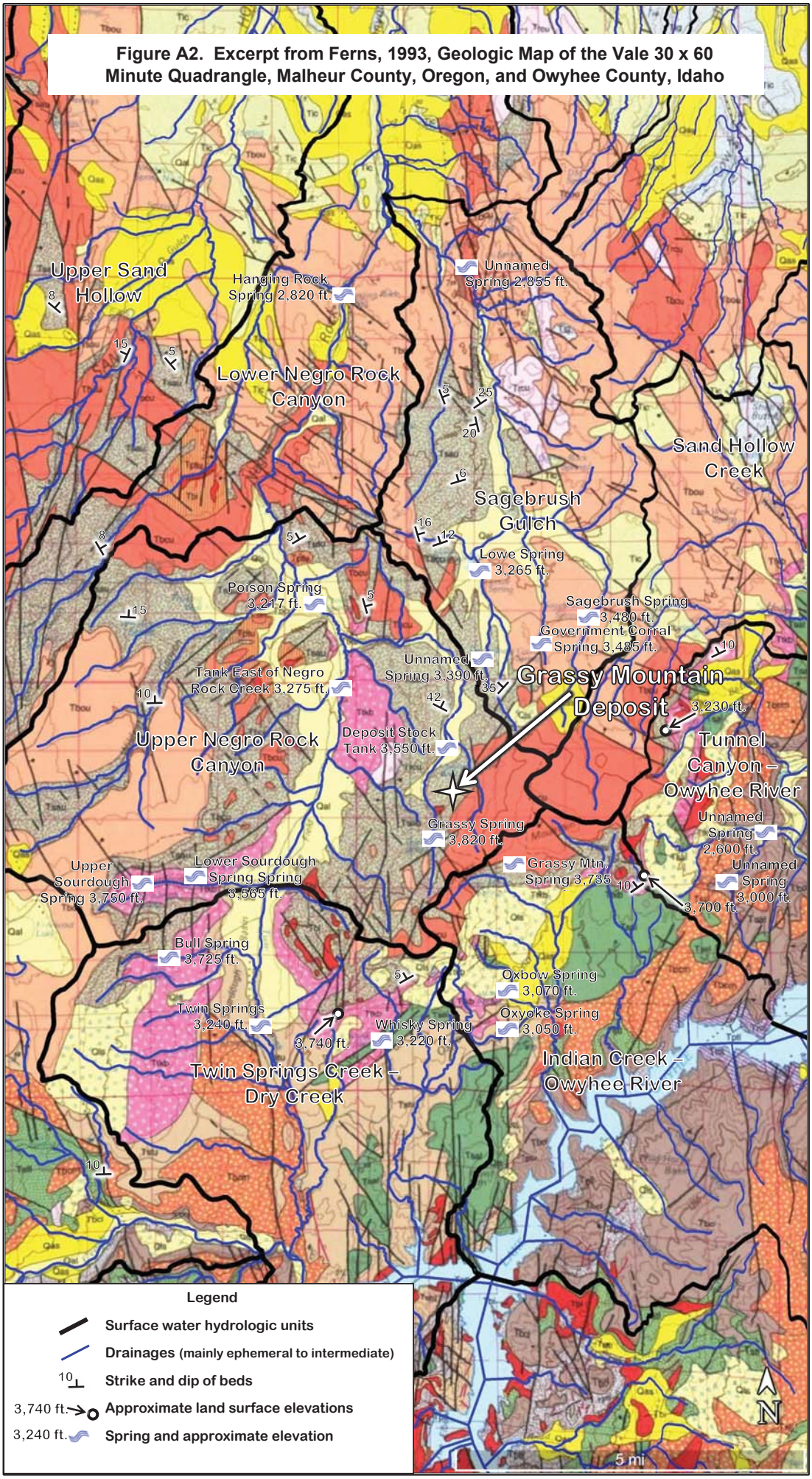


Figure A2. Excerpt from Ferns, 1993, Geologic Map of the Vale 30 x 60 Minute Quadrangle, Malheur County, Oregon, and Owyhee County, Idaho



Appendix B
Well and Vibrating Wire Piezometer Hydrographs

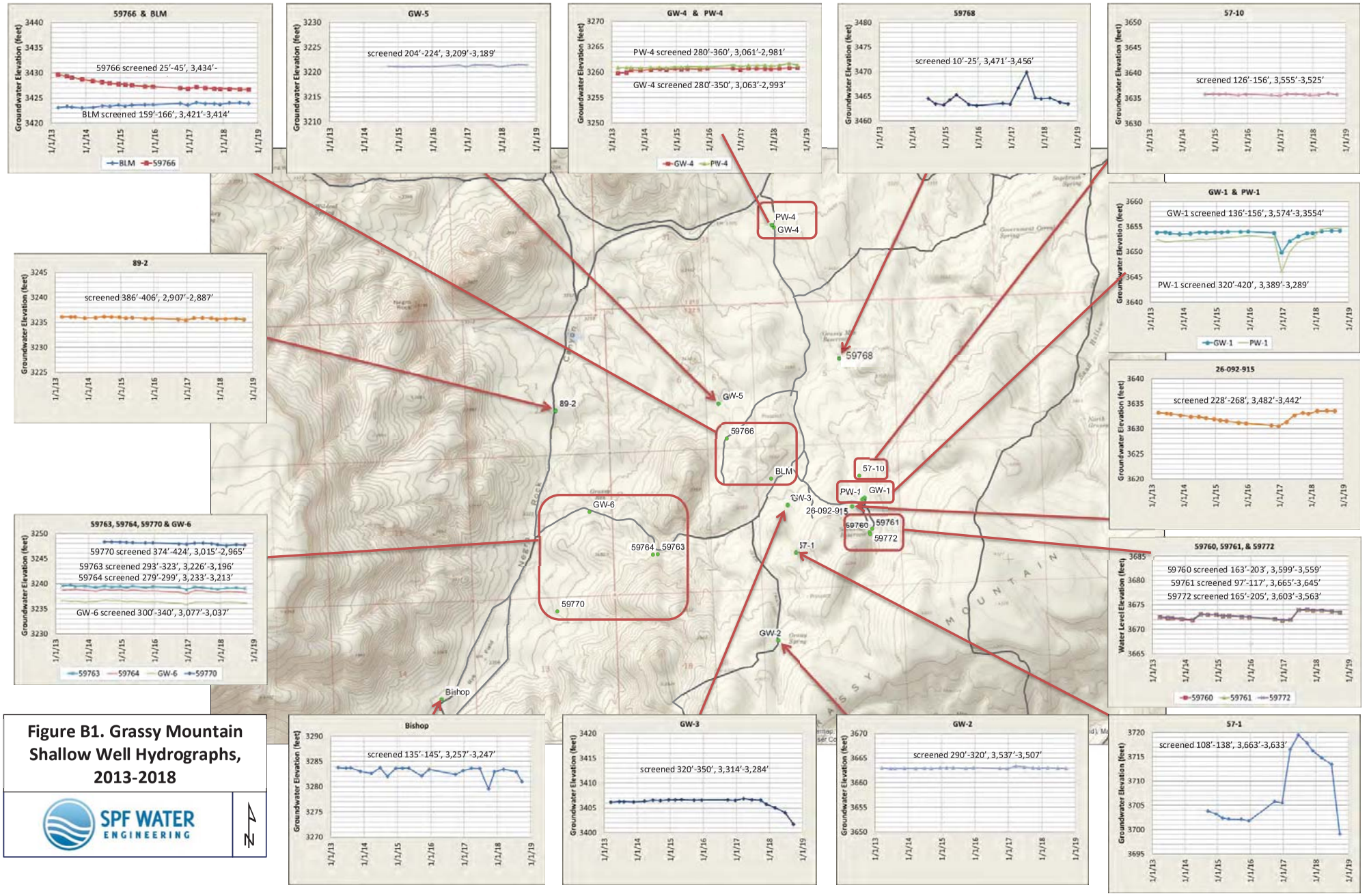


Figure B1. Grassy Mountain Shallow Well Hydrographs, 2013-2018

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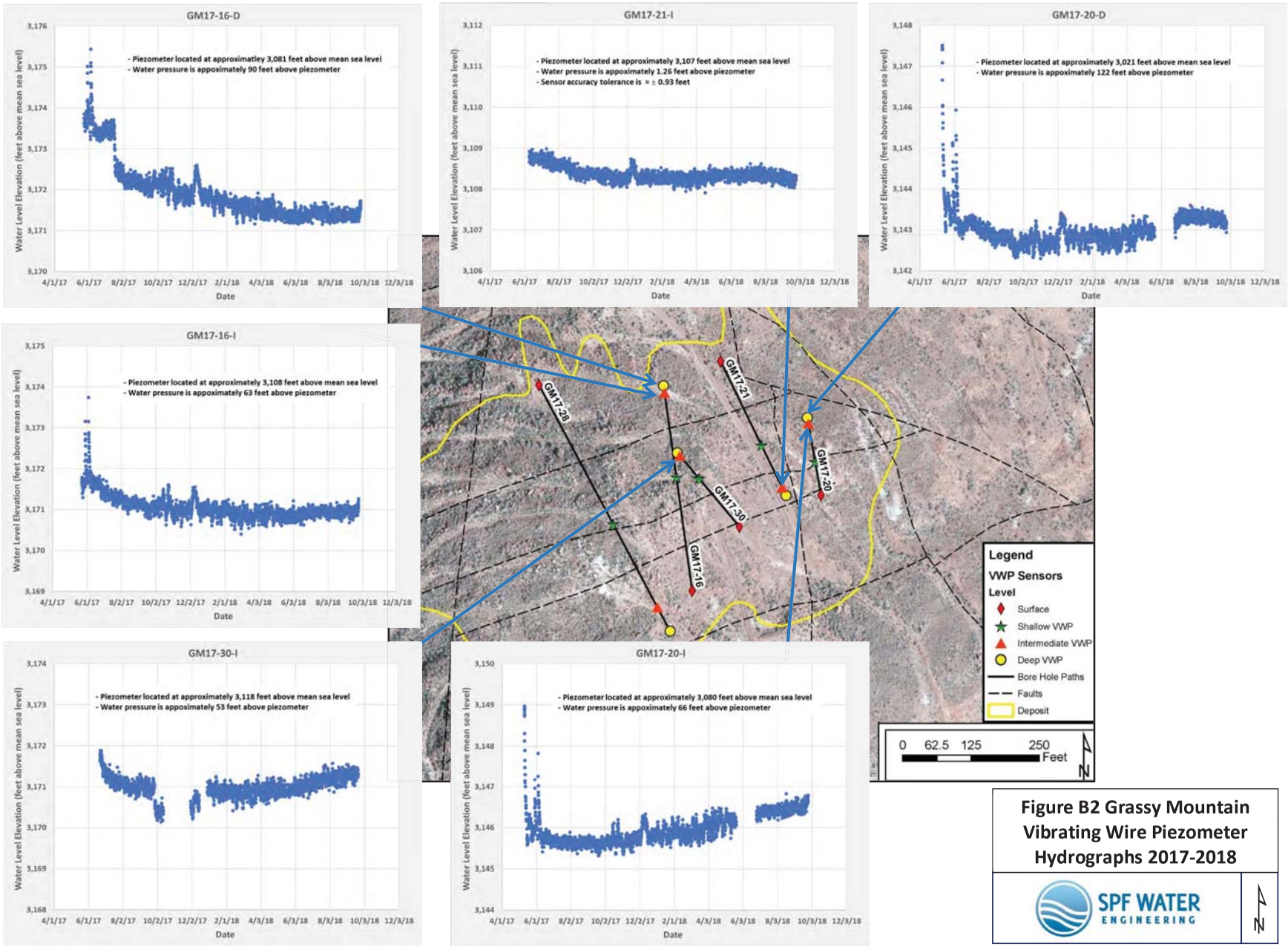

Figure B2 Grassy Mountain Vibrating Wire Piezometer Hydrographs 2017-2018

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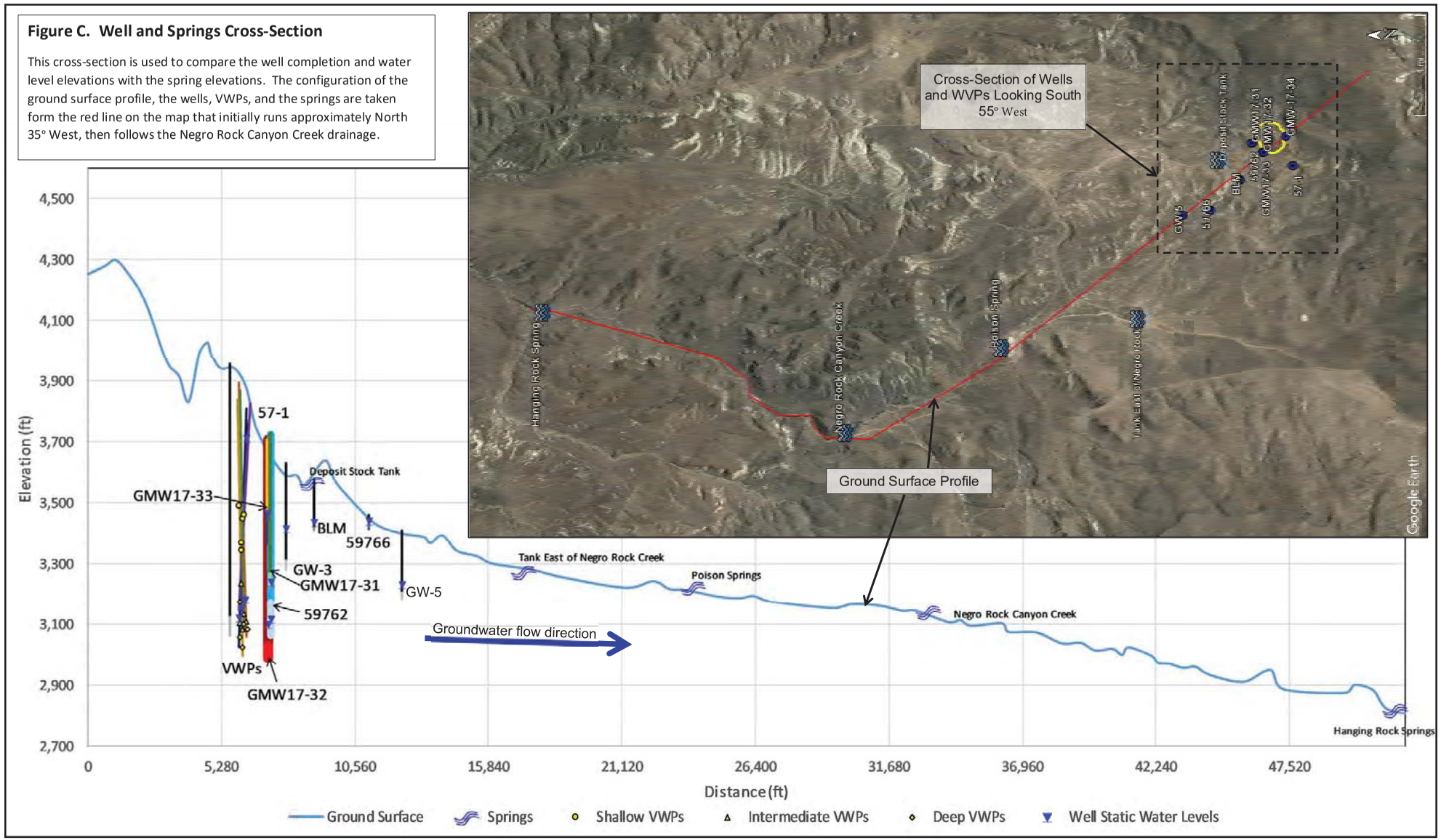
Appendix C
Water Levels and Springs Cross-Sections

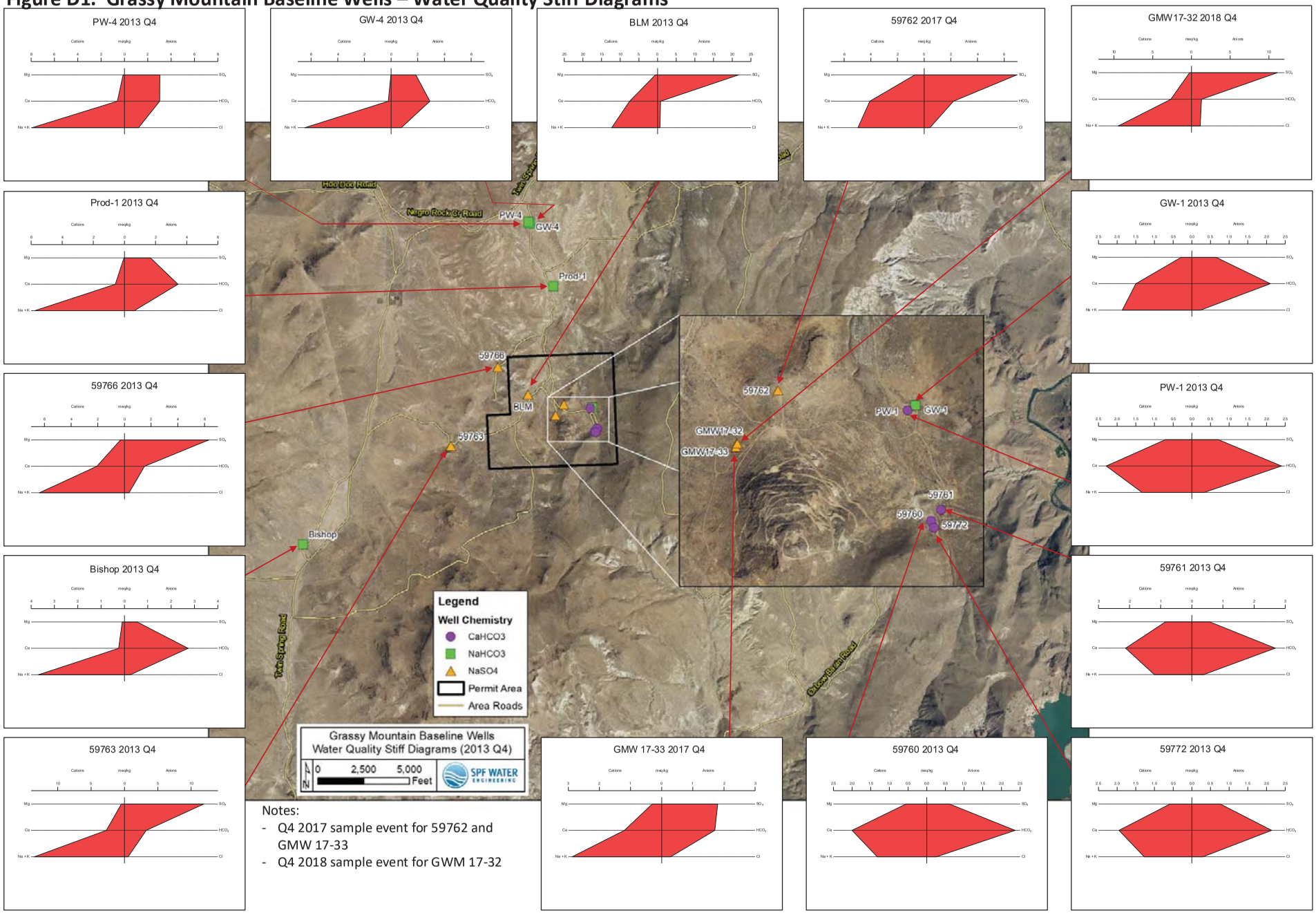
Figure C. Well and Springs Cross-Section

This cross-section is used to compare the well completion and water level elevations with the spring elevations. The configuration of the ground surface profile, the wells, VWPs, and the springs are taken form the red line on the map that initially runs approximately North 35° West, then follows the Negro Rock Canyon Creek drainage.



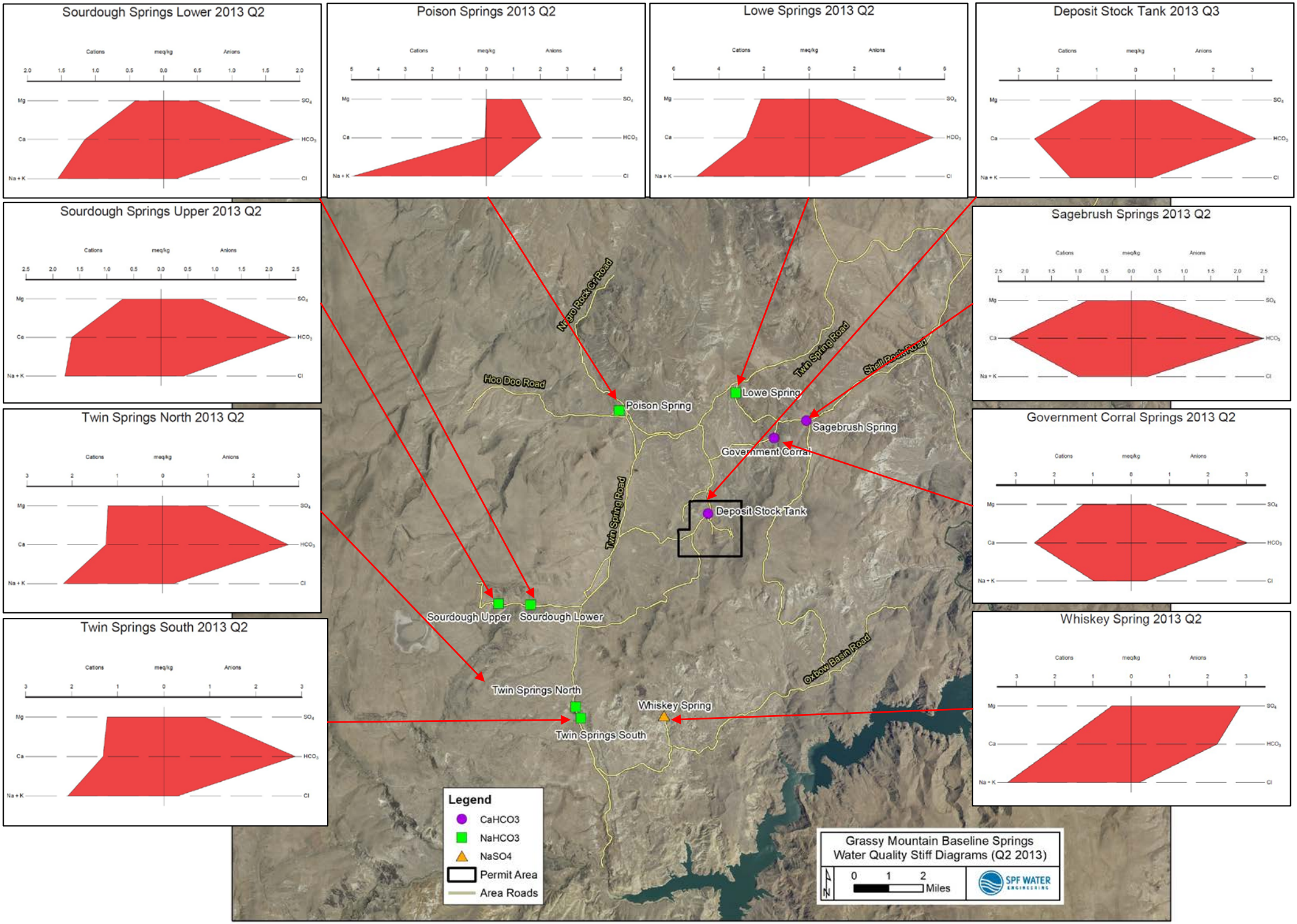
Appendix D
Hydrochemical Facies Diagrams

Figure D1. Grassy Mountain Baseline Wells – Water Quality Stiff Diagrams



Notes:

- Q4 2017 sample event for 59762 and GMW 17-33
- Q4 2018 sample event for GWM 17-32



Note: Q3 2013 sample even for Deposit Stock Tank

Figure D2. Grassy Mountain Baseline Springs Water Quality Stiff Diagrams

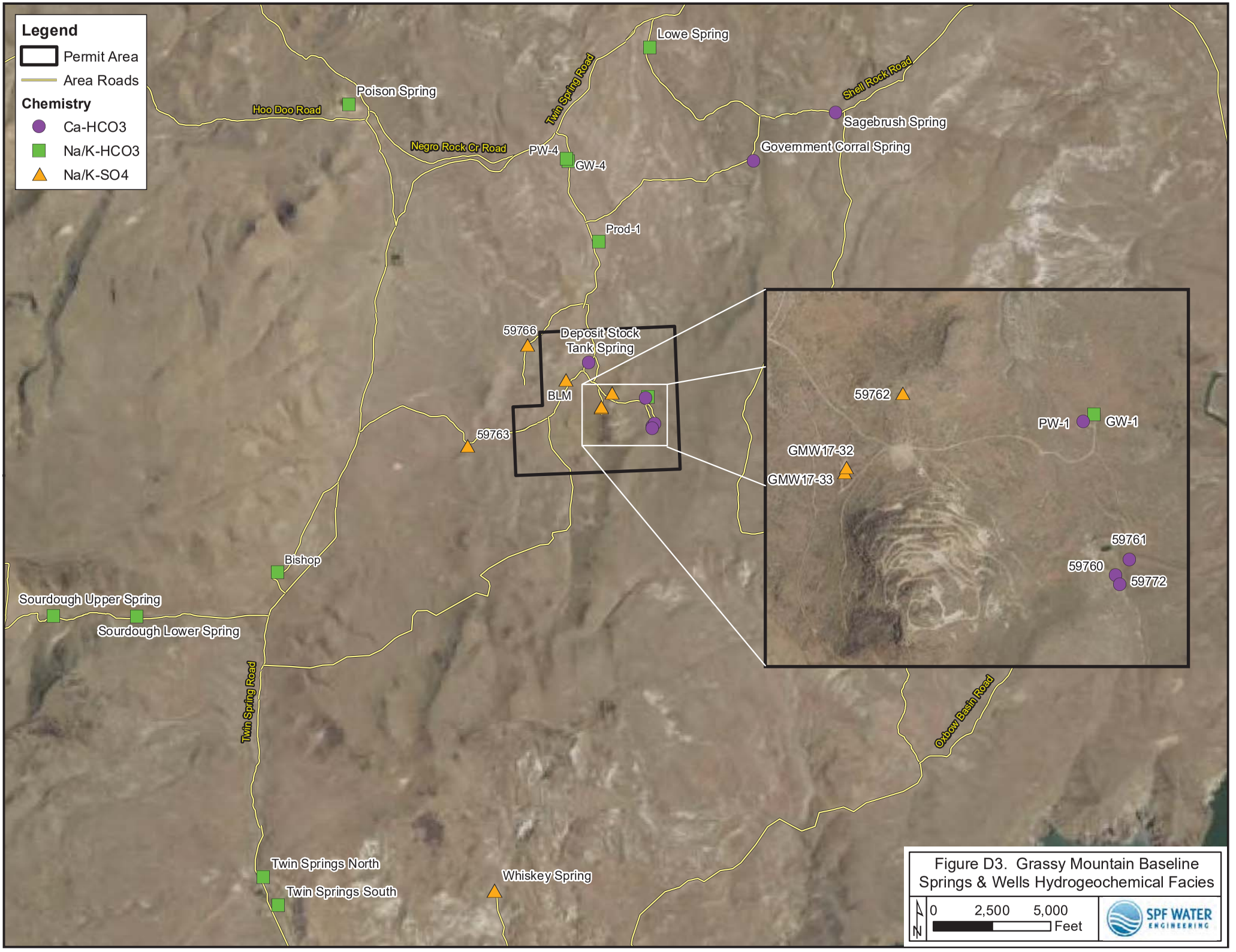

Legend
Permit Area
Area Roads
Chemistry
Ca-HCO3
Na/K-HCO3
Na/K-SO4
Lowe Spring
Poison Spring
Hoo Doo Road
Twin Spring Road
Shell Rock Road
Sagebrush Spring
Government Corral Spring
Negro Rock Cr Road
PW-4
GW-4
Prod-1
59766
Deposit Stock Tank Spring
BLM
59763
59762
PW-1
GW-1
GMW17-32
GMW17-33
59761
59760
59772
Bishop
Sourdough Upper Spring
Sourdough Lower Spring
Twin Spring Road
Oxbow Basin Road
Twin Springs North
Twin Springs South
Whiskey Spring
Figure D3. Grassy Mountain Baseline Springs & Wells Hydrogeochemical Facies
N
0
2,500
5,000
Feet
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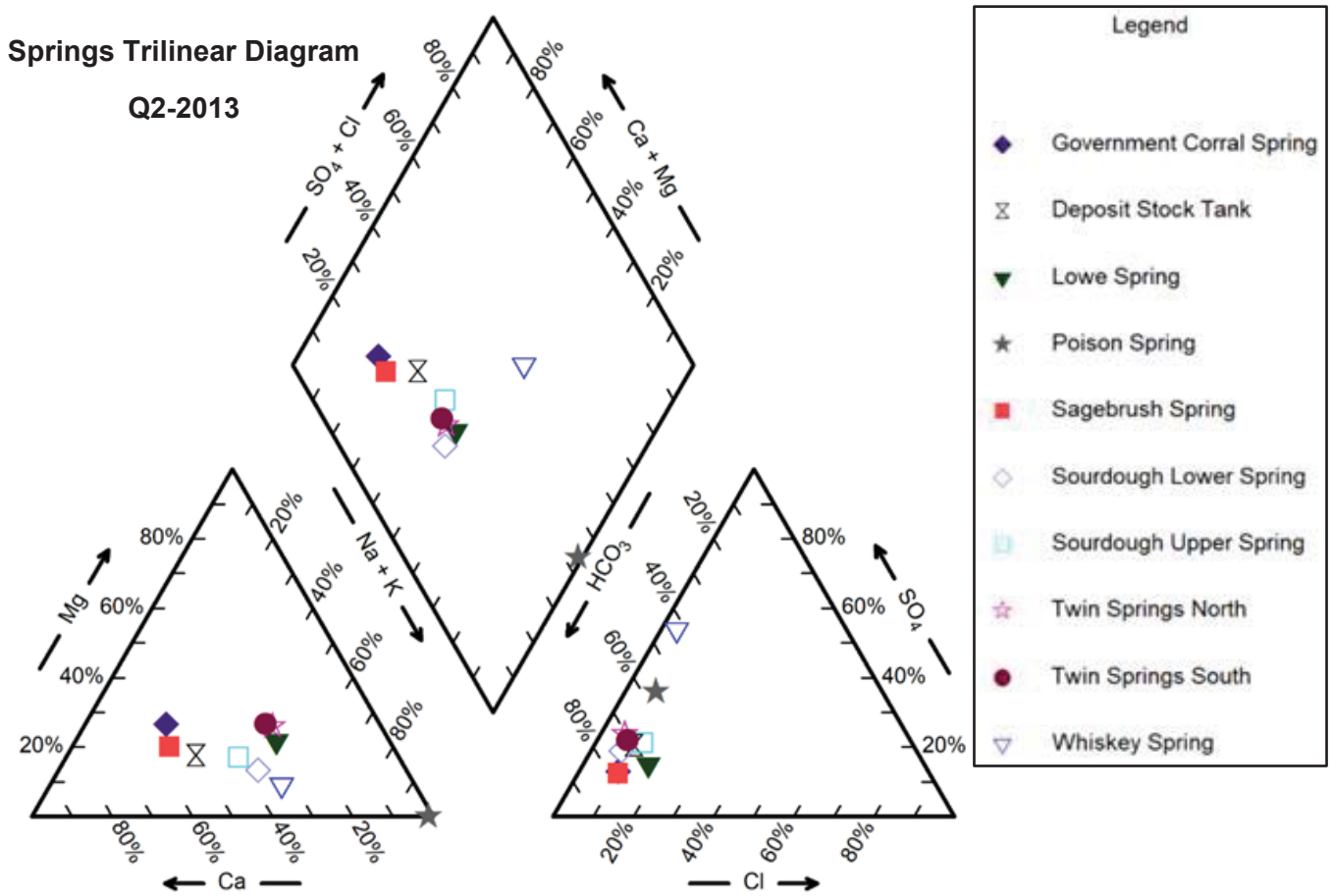
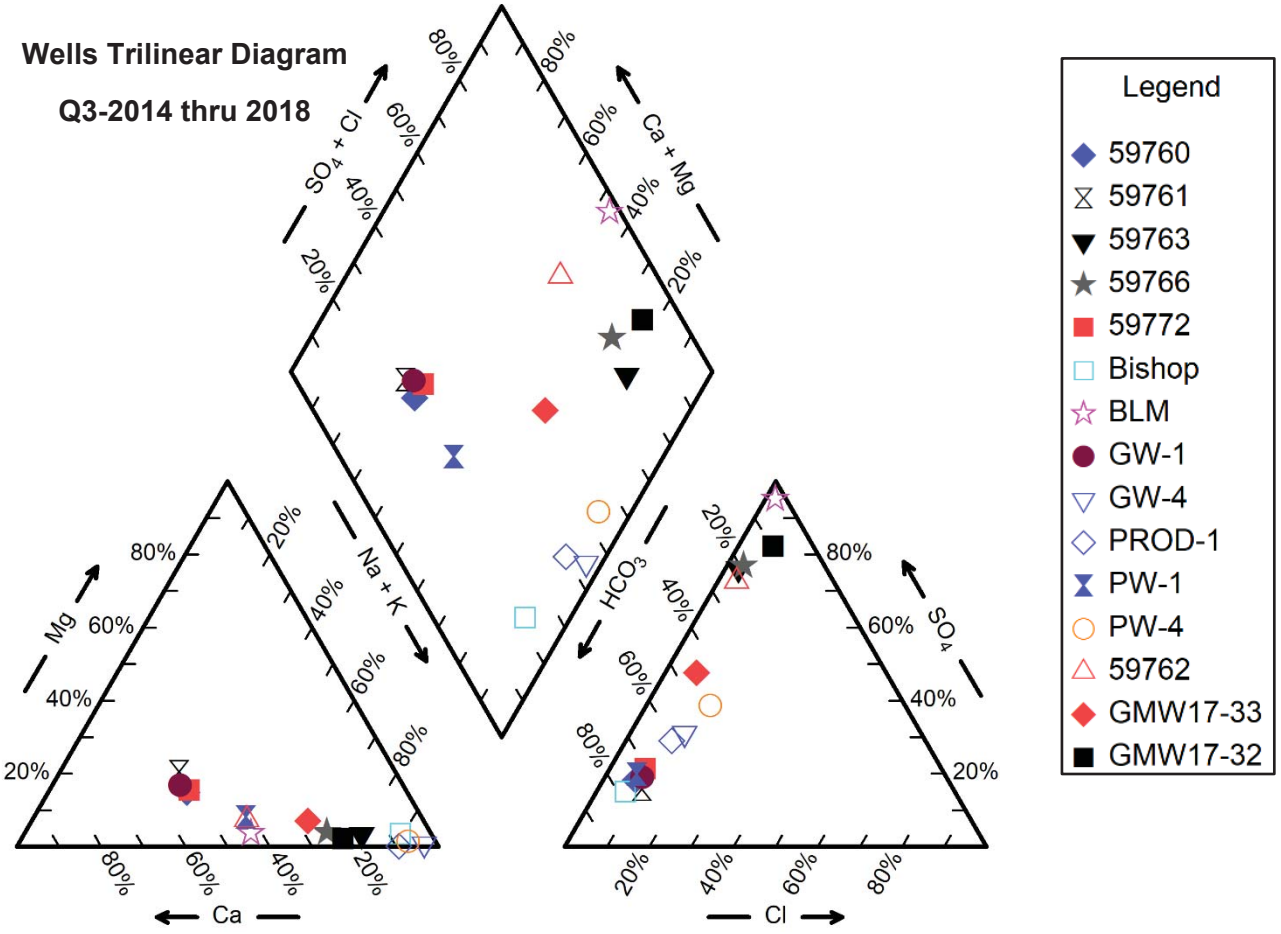
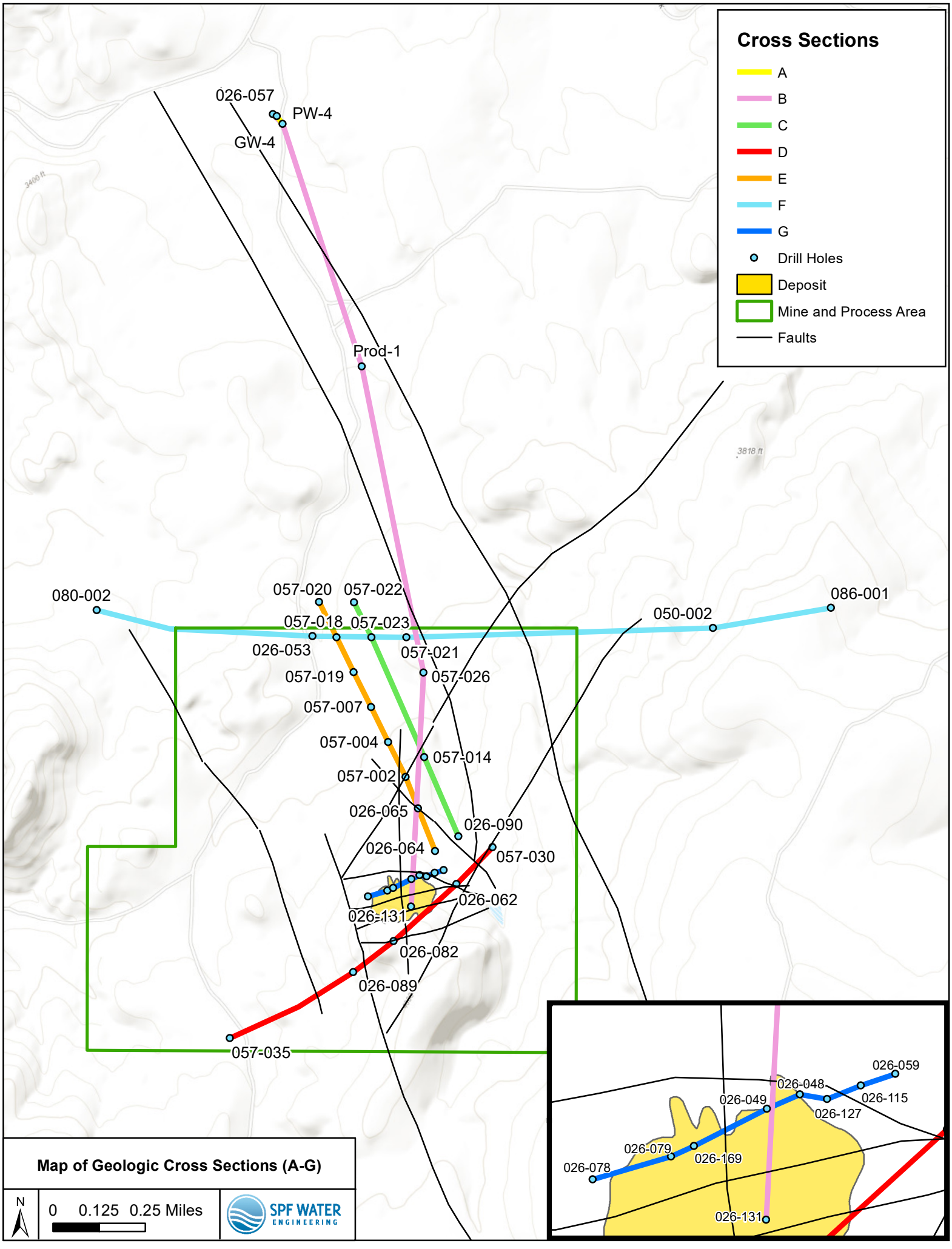
Figure D4 - Groundwater Trilinear Diagrams





Appendix E
Cross-Sections


Cross Sections
A
B
C
D
E
F
G
Drill Holes
Deposit
Mine and Process Area
Faults
026-057
PW-4
GW-4
Prod-1
080-002
057-020
057-022
057-018
057-023
026-053
057-021
057-019
057-026
057-007
057-004
057-014
057-002
026-065
026-090
026-064
057-030
026-062
026-131
026-082
026-089
057-035
050-002
086-001
026-059
026-048
026-049
026-115
026-127
026-079
026-169
026-078
026-131
Map of Geologic Cross Sections (A-G)
N
0 0.125 0.25 Miles
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Cross Section A

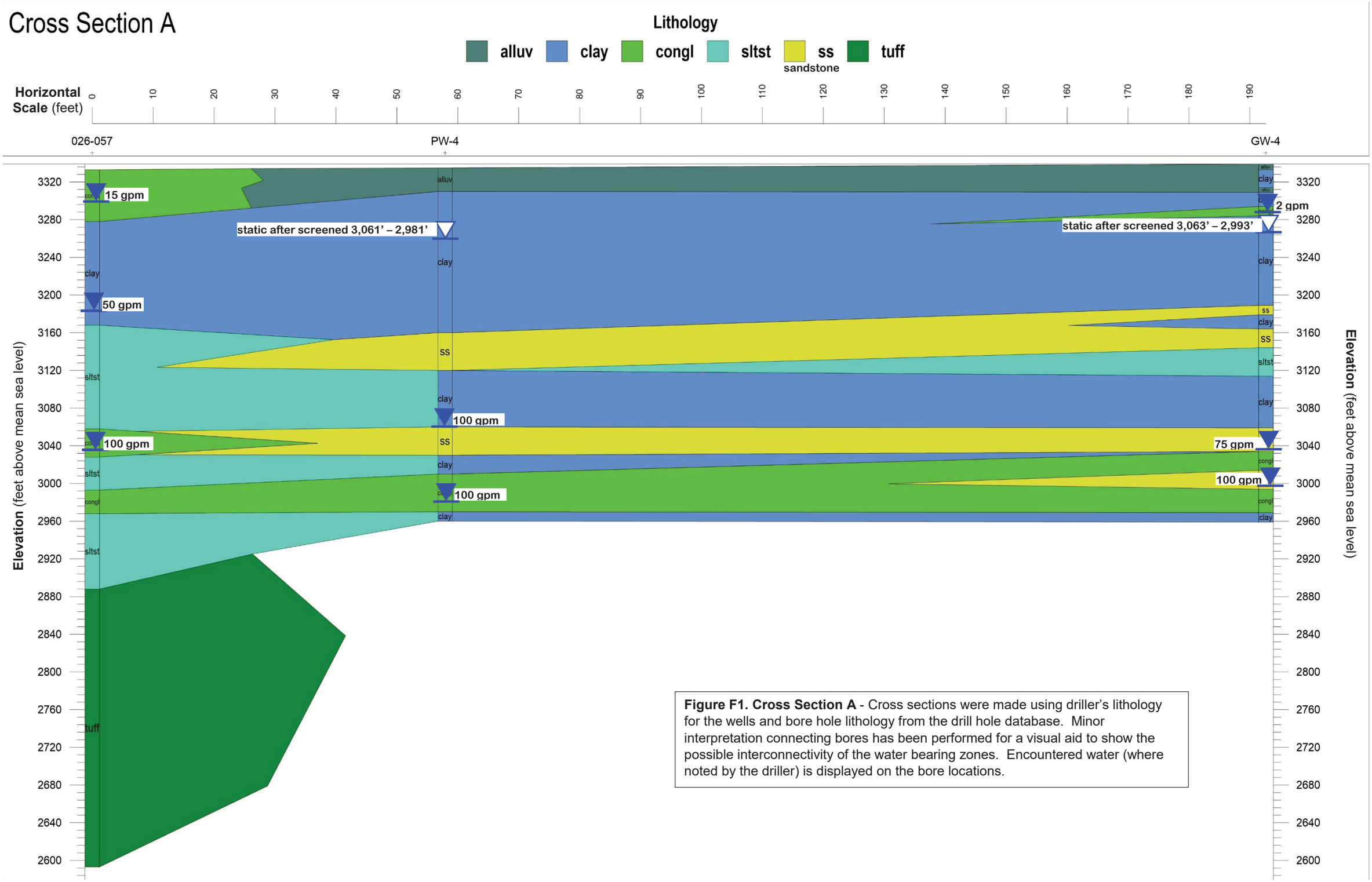


Figure F1. Cross Section A - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations.

Cross Section B

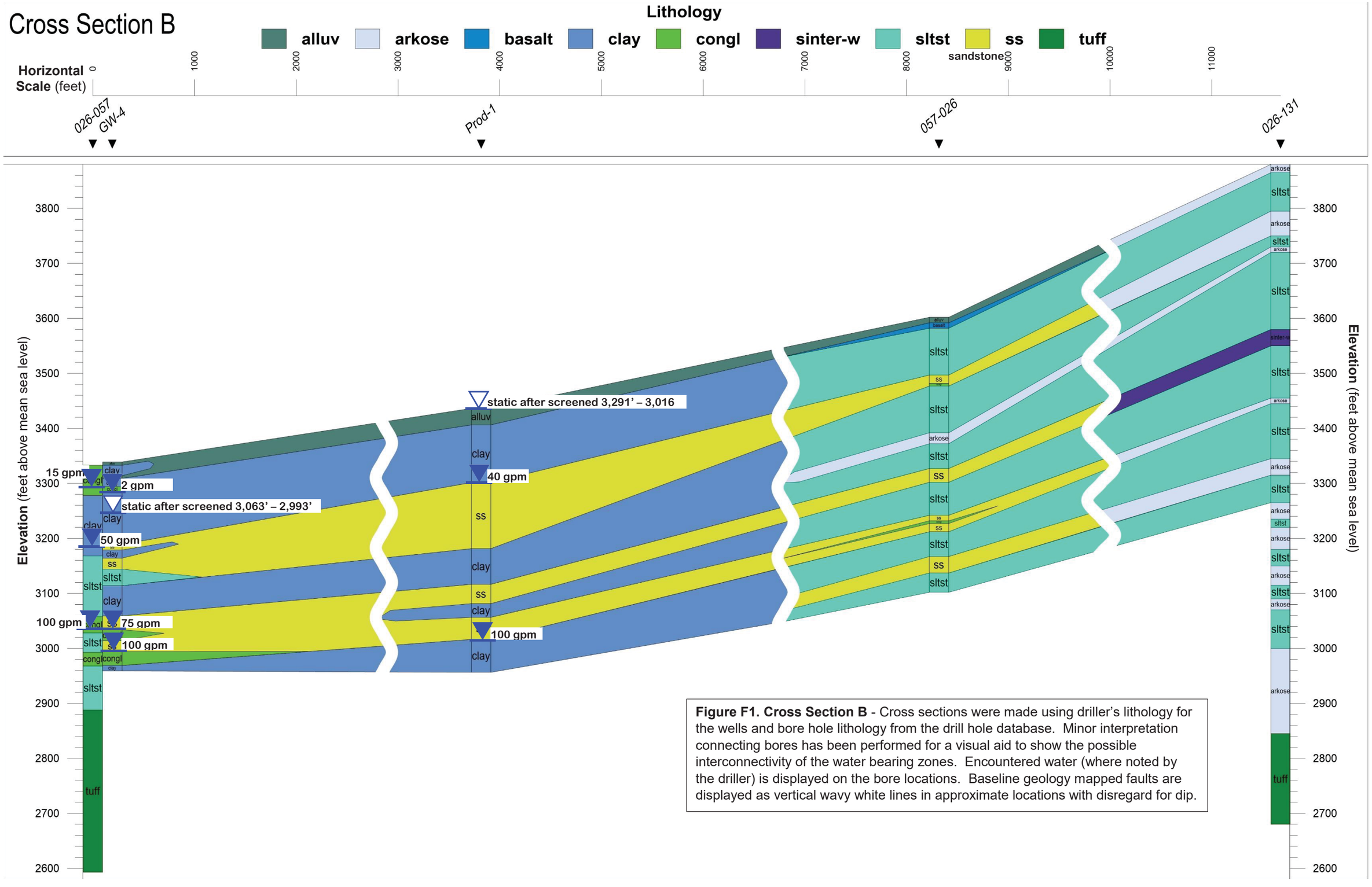


Figure F1. Cross Section B - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for dip.

Cross Section C

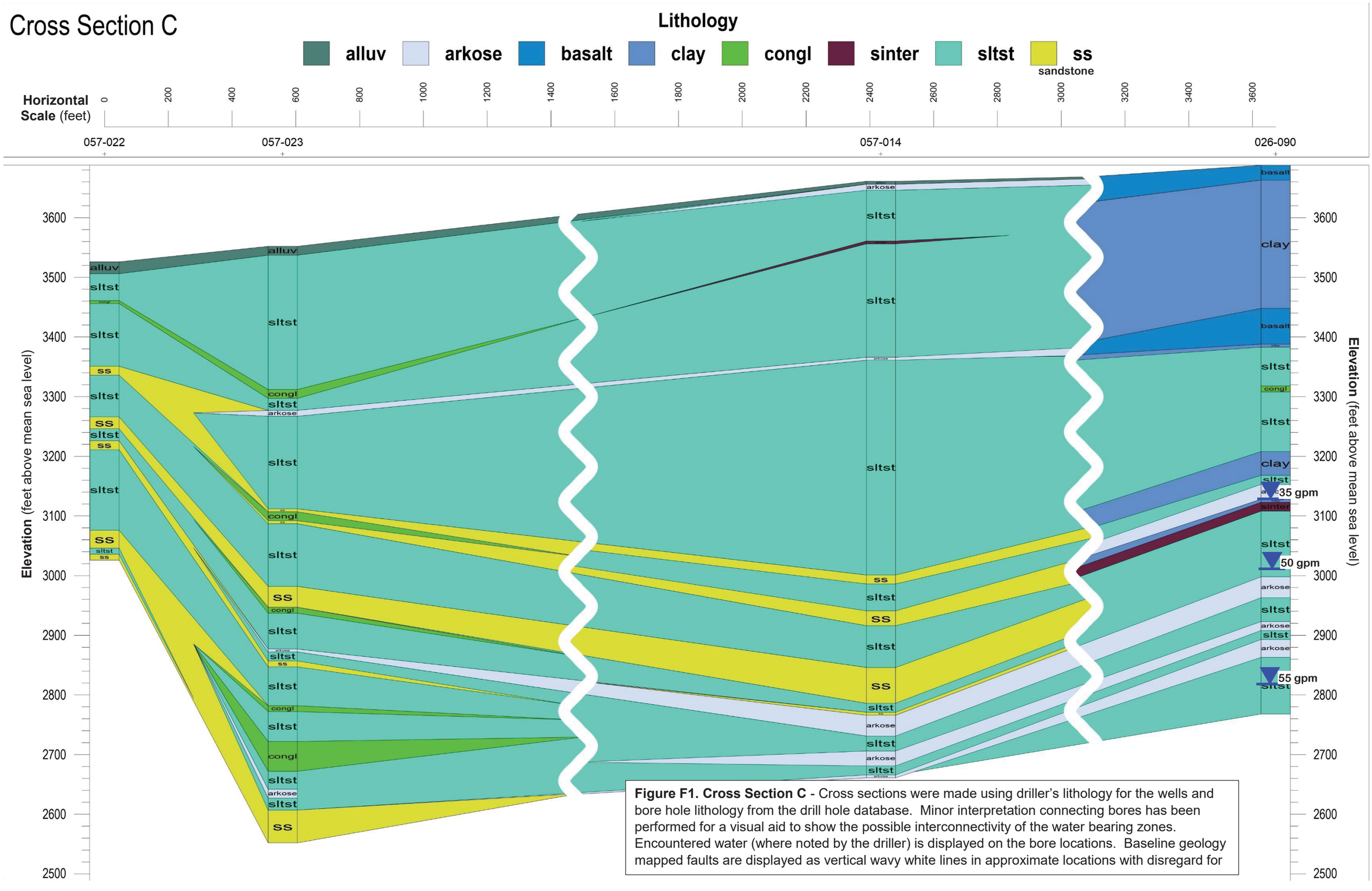


Figure F1. Cross Section C - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for

Cross Section D

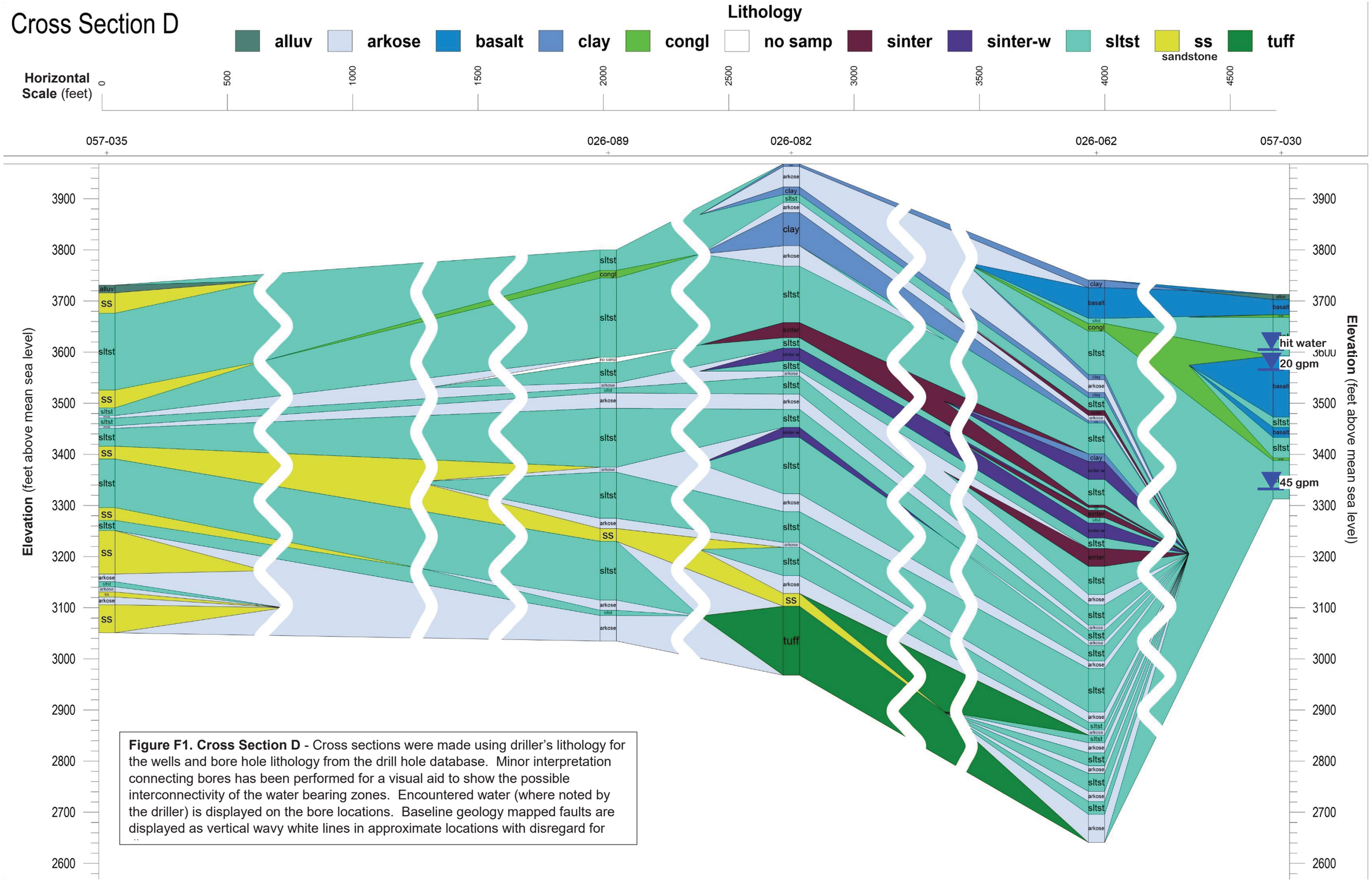


Figure F1. Cross Section D - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for

Cross Section E

Lithology

alluv | arkose | basalt | clay | congl | sinter | sinter-w | sltst | ss (sandstone)

Horizontal Scale (feet)

0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800

057-020 057-018 057-019 057-007 057-004 057-002 026-065 026-064

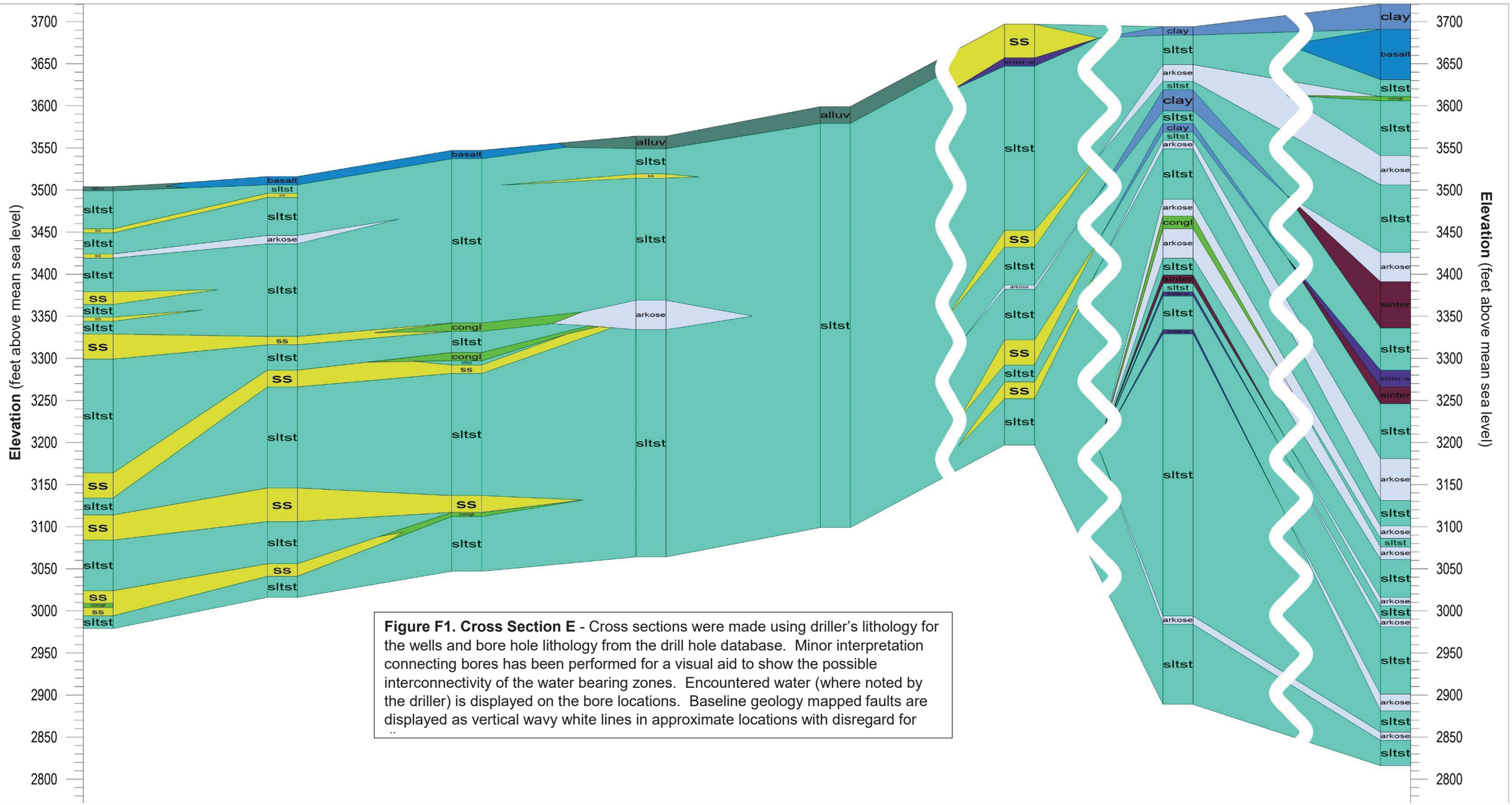


Figure F1. Cross Section E - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for

Cross Section F

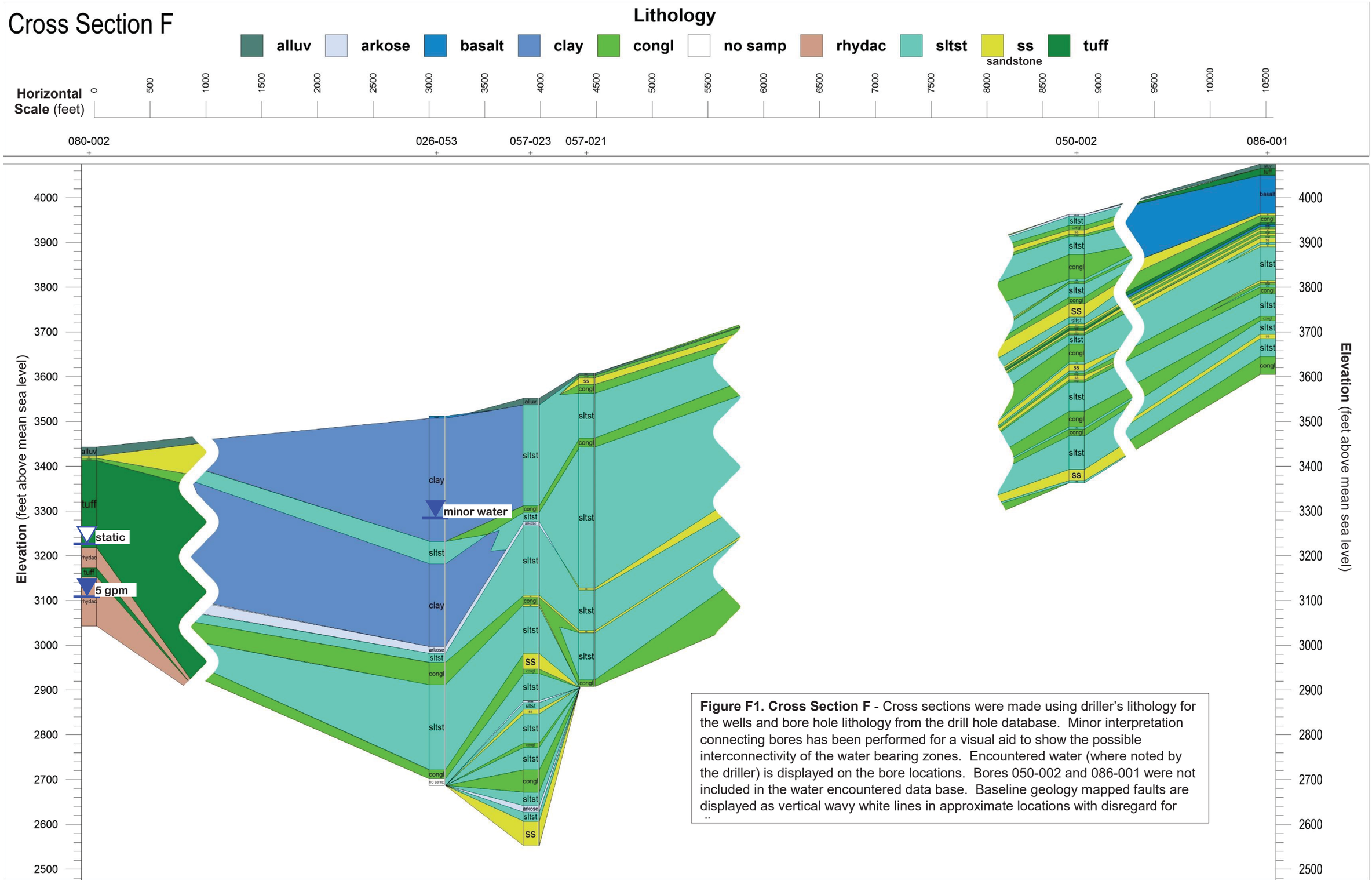


Figure F1. Cross Section F - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Encountered water (where noted by the driller) is displayed on the bore locations. Bores 050-002 and 086-001 were not included in the water encountered data base. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for

Cross Section G

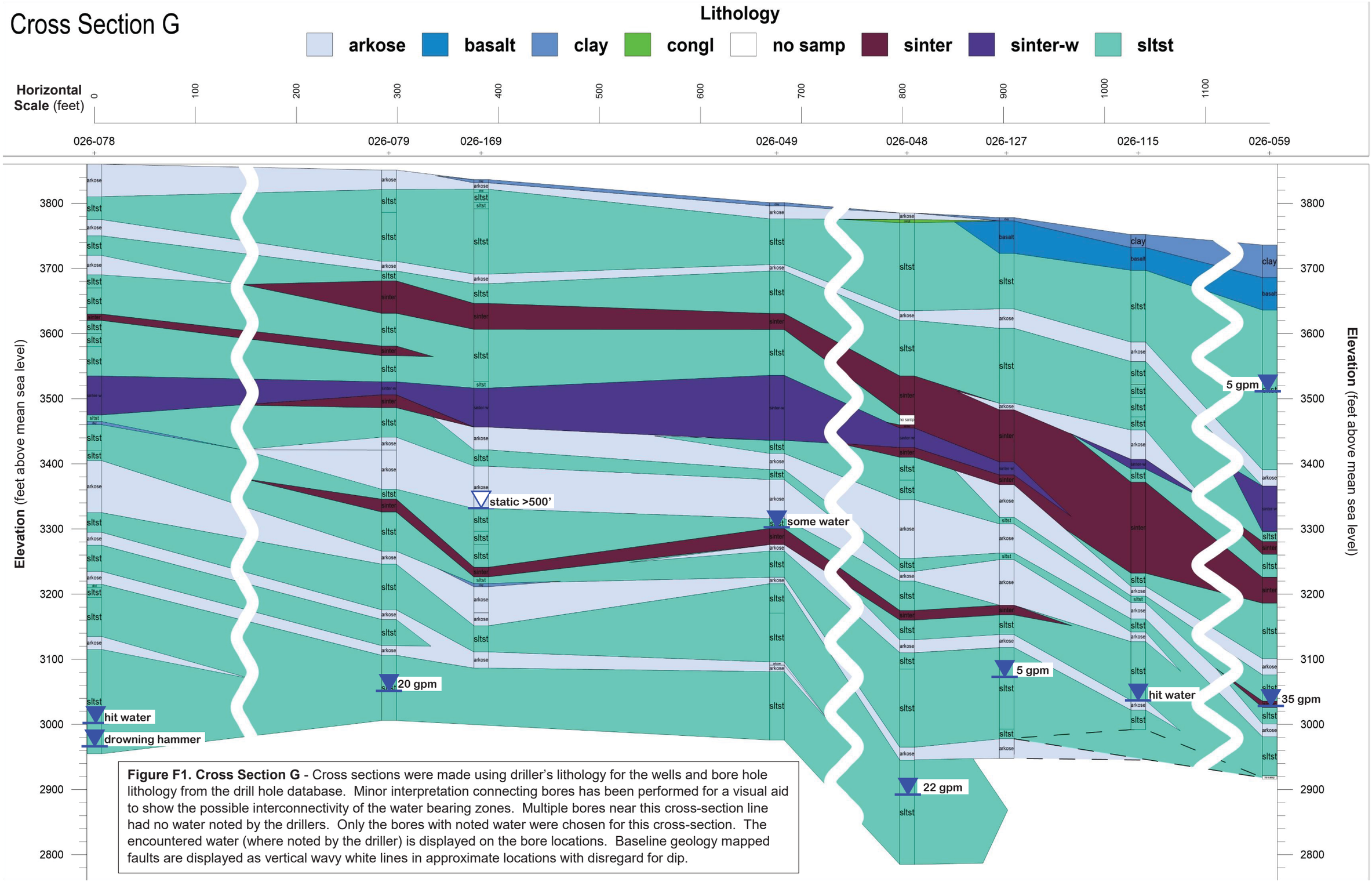
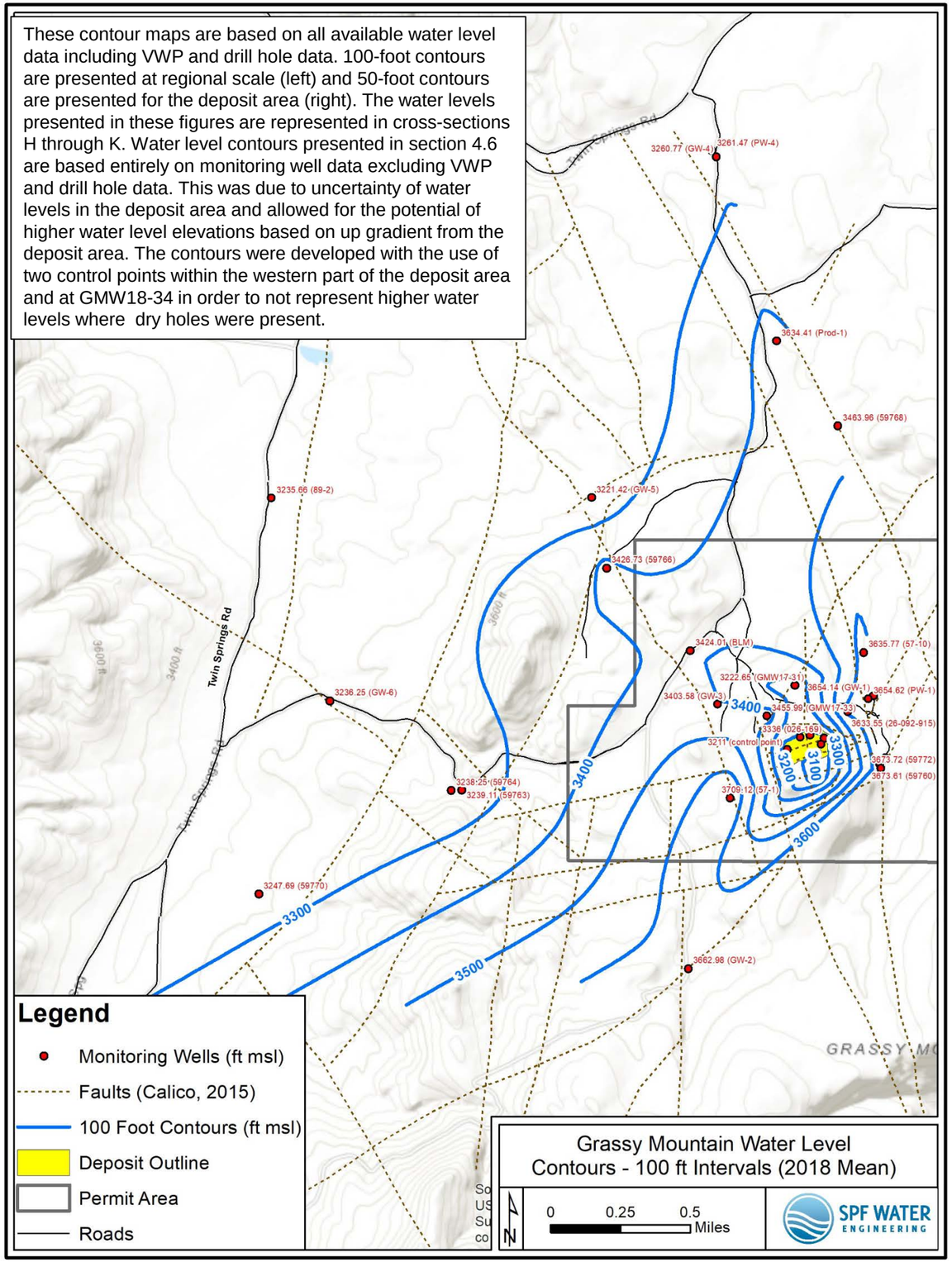
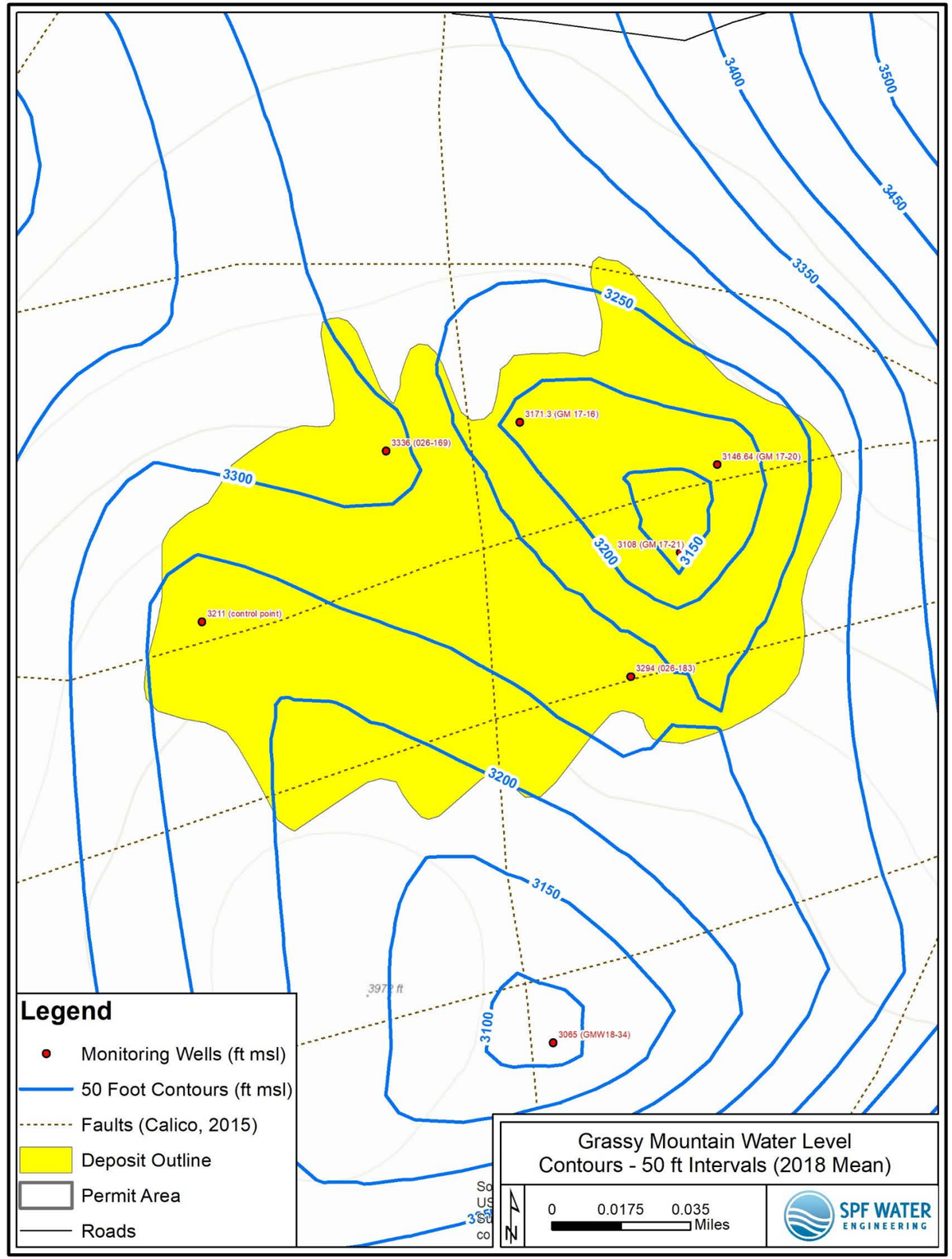
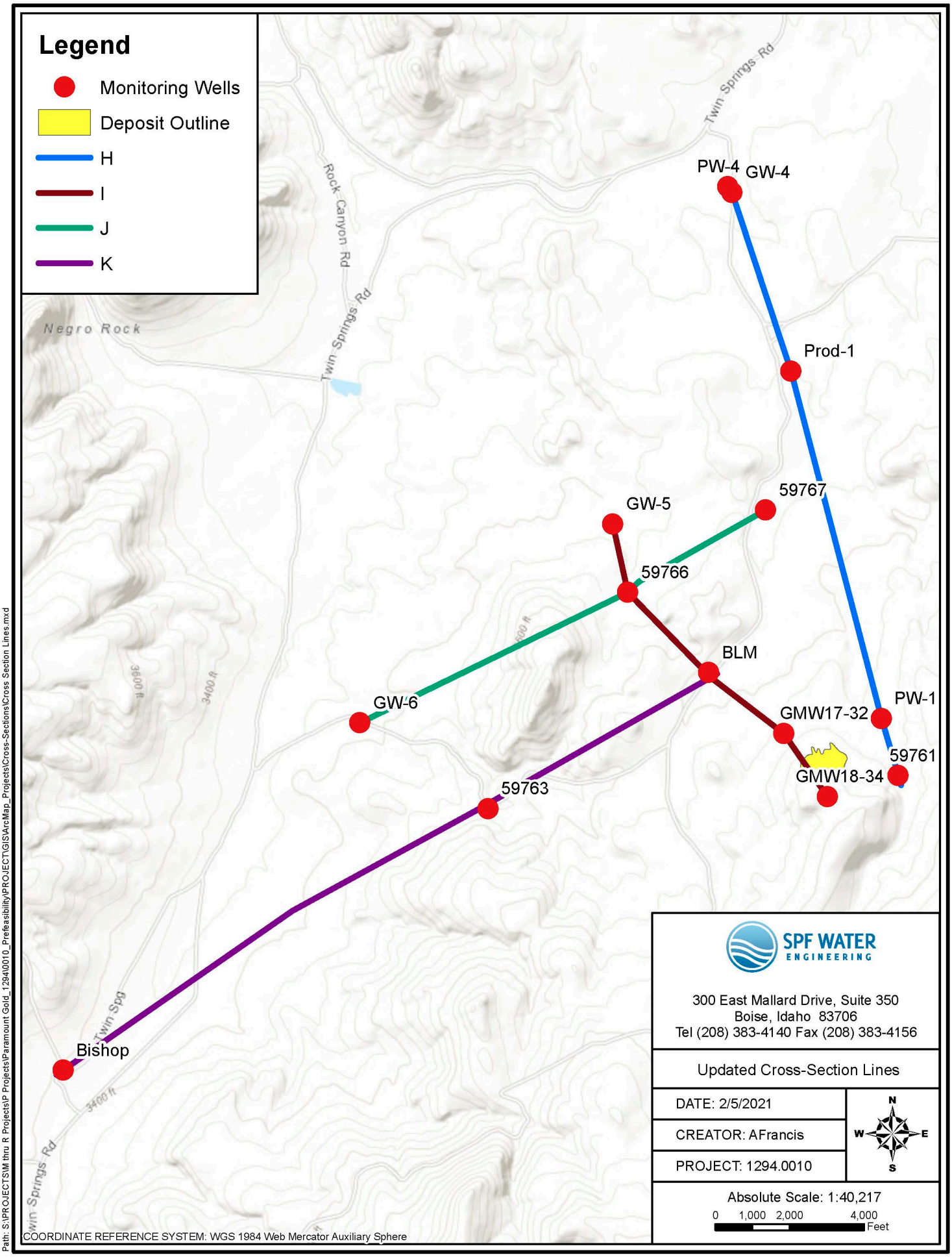


Figure F1. Cross Section G - Cross sections were made using driller's lithology for the wells and bore hole lithology from the drill hole database. Minor interpretation connecting bores has been performed for a visual aid to show the possible interconnectivity of the water bearing zones. Multiple bores near this cross-section line had no water noted by the drillers. Only the bores with noted water were chosen for this cross-section. The encountered water (where noted by the driller) is displayed on the bore locations. Baseline geology mapped faults are displayed as vertical wavy white lines in approximate locations with disregard for dip.

These contour maps are based on all available water level data including VWP and drill hole data. 100-foot contours are presented at regional scale (left) and 50-foot contours are presented for the deposit area (right). The water levels presented in these figures are represented in cross-sections H through K. Water level contours presented in section 4.6 are based entirely on monitoring well data excluding VWP and drill hole data. This was due to uncertainty of water levels in the deposit area and allowed for the potential of higher water level elevations based on up gradient from the deposit area. The contours were developed with the use of two control points within the western part of the deposit area and at GMW18-34 in order to not represent higher water levels where dry holes were present.







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Tel (208) 383-4140 Fax (208) 383-4156

Updated Cross-Section Lines

DATE: 2/5/2021

CREATOR: AFrancis

PROJECT: 1294.0010

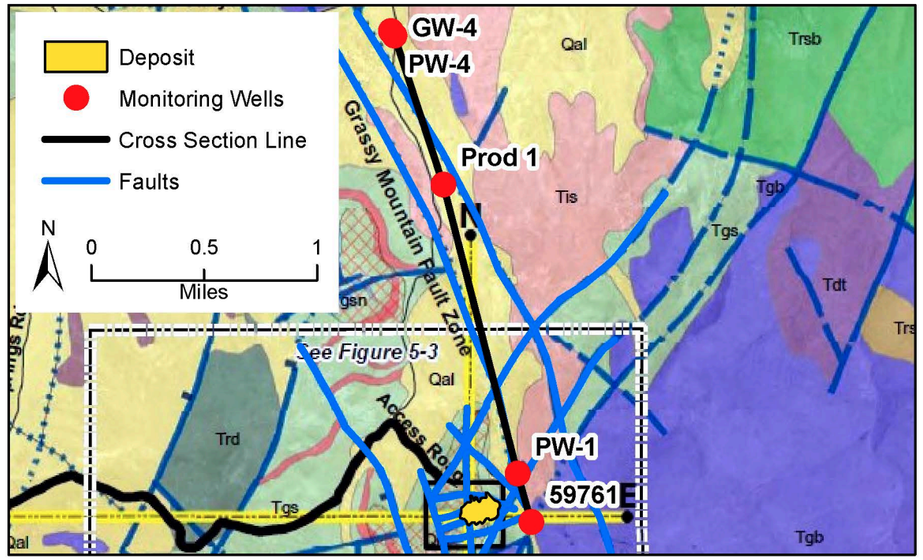
Absolute Scale: 1:40,217

0 1,000 2,000 4,000 Feet

N W E S

Path: S:\PROJECTS\M thru R Projects\P Projects\Paramount Gold_1294\0010_Prefeasibility\PROJECT\GIS\ArcMap_Projects\Cross-Sections\Cross Section Lines.mxd

Cross Section H



Legend

- Faults
- 2017 Avg Water Level Contour Surface
- Well Screens
- Basalt
- Alluvium
- Clay
- Clay/Silt
- Sand and Gravel
- Sand/Conglomerate

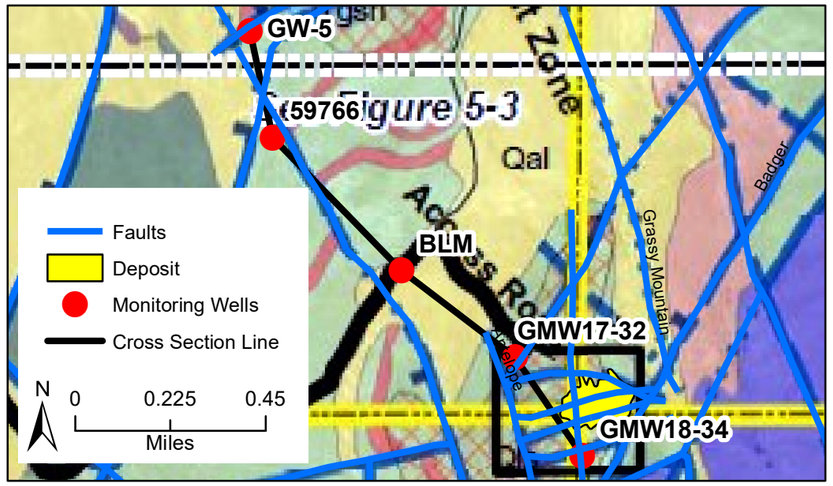
Feet (above mean sea level)

GW-4 PW-4 Prod-1 PW-1 59761

Vertical Exaggeration 5X

Feet

Cross Section I



GMW 18-34

GMW 17-32
GMW 17-33

BLM

59766

GW-5

Tuff
Sinter
Clay
Siltstone
Conglomerate

Vertical Exaggeration 5X

Legend

- 2017 Water Level Contour Surface
- Faults
- GMW 17-32 Water Level
- Well Screens

I Correlation

Unit

- Alluvium
- Fine Grain (Clay, Siltstone, Sinter)
- Coarse Grain (Sandstone)
- Tuff and Rhyolite

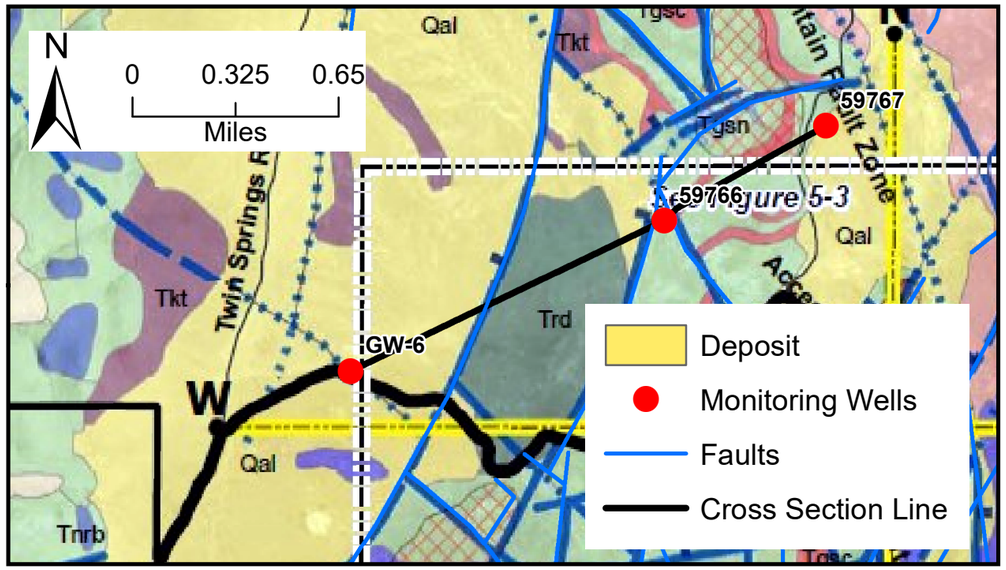
Feet (above mean sea level)

4000 3900 3800 3700 3600 3500 3400 3300 3200 3100 3000 2900 2800

0 1000 2000 3000 4000 5000 6000 7000 8000 9000

Feet

Cross Section J



Legend

- 2017 Water Level Contour
- Faults
- Well Screens
- Alluvium
- Rhyolite/Dacite
- Sandstone
- Sandstone/Conglomerate
- Tuff
- Tuff and Rhyolite

GW-6

59766

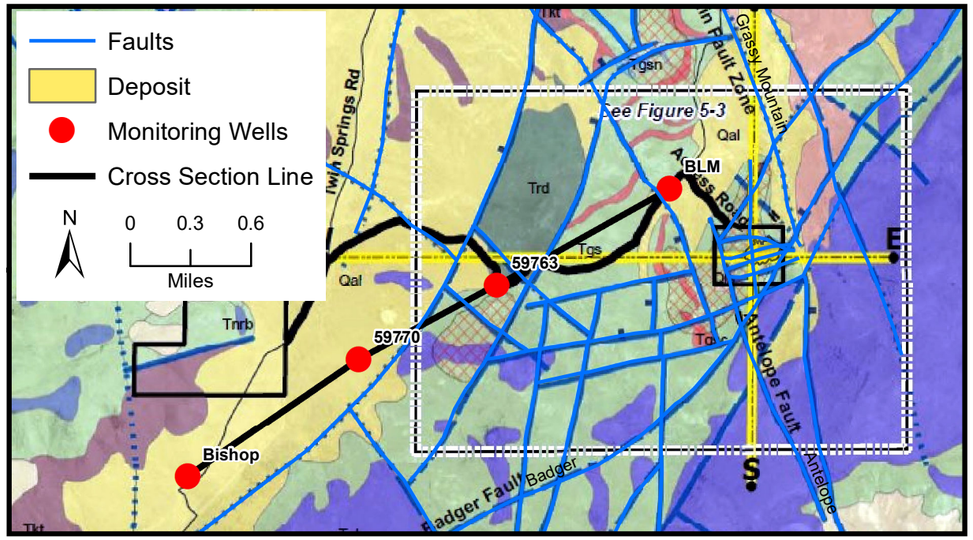
59767

Vertical Exaggeration 5X

Feet (above mean sea level)

Feet

Cross Section K



Legend

- 2017 Water Level Contour Surface
- Faluts
- Well Screens
- Volcanics (Tuff/Rhyolite)
- Volcanics (Tuff)
- Volcanics (Rhyolite/Dacite)
- Clay
- Sandstone
- Alluvium

BLM **59763** **59770** **Bishop**

?

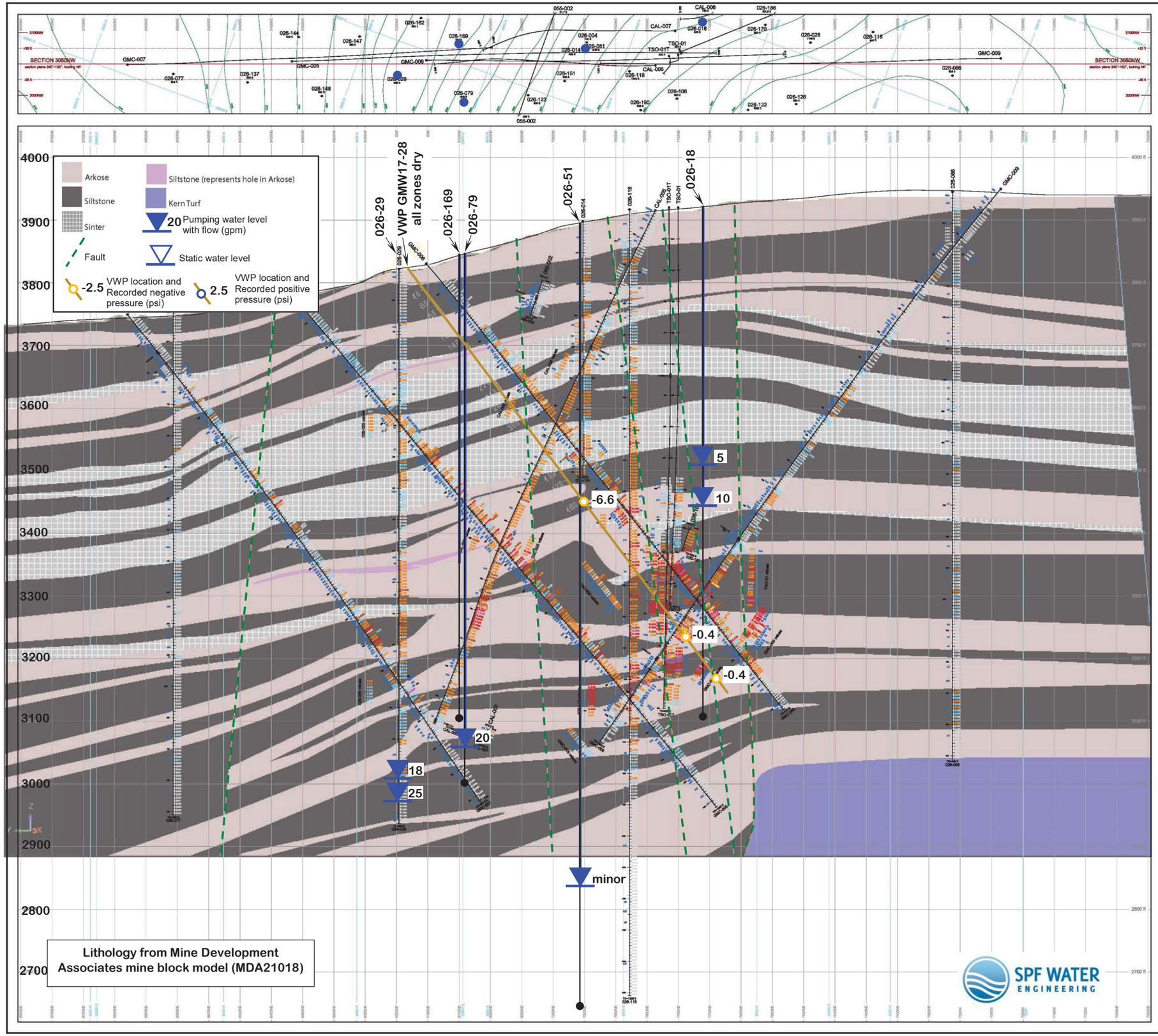
Vertical Exaggeration 5X

Feet (above mean sea level)

Feet

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000

4400 4300 4200 4100 4000 3900 3800 3700 3600 3500 3400 3300 3200 3100 3000 2900 2800 2700 2600 2500



Section 3050NW
with Au Values
(looking N70°E)

Grassy Mountain Project
Malheur County, Oregon
July, 2012

1 inch

VERTICAL EXAGERATION 1:1
Sections every 50 feet
Drillholes projected ±25 feet from section line

SECTION 3050NW crosses:
- SECTION 8800NE @ 23558.6341, 9304.2829
- SECTION 7900NE @ 23866.4519, 8458.5567
- SECTION 7000NE @ 24174.2700, 7612.8304

HOLES PLOTTED ON SECTION (15 total)

026-014 026-029 026-077 026-086 026-118 026-186 055-002
CAL-005 CAL-007 GMC-005 GMC-006 GMC-007 GMC-009 TSO-01
TSO-01T

DRILLHOLE NOTEATIONS

- drillhole collar
- drillhole entering section
- drillhole leaving section
- end of drillhole
- P=236.1 ft drillhole piercing section plane
- drillhole piercing back of section
- drillhole piercing front of section

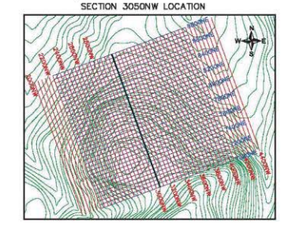
DOWNHOLE CHEMISTRY (ounce/ton Au)
values rounded to 3 decimal places

- 3.794 – Au 1.000 opt and higher
- 0.859 – Au 0.500 opt to 0.9999 opt
- 0.372 – Au 0.100 opt to 0.0499 opt
- 0.088 – Au 0.060 opt to 0.0999 opt
- 0.052 – Au 0.016 opt to 0.0599 opt
- 0.010 – Au 0.010 opt to 0.0159 opt
- 0.000 – Au less than 0.010 opt

DOWNHOLE LITHOLOGY (listed alphabetically)

- ark – arkose
- bas – basalt
- bxa – breccia
- clay – clay
- cmbxa – clay–matrix breccia
- cong – conglomerate
- fbxa – fault breccia
- flt – fault
- gvl – gravel
- hbxa – hydrothermal breccia
- mudst – mudstone
- NS – no sample
- ovbdn – overburden
- slt – siltstone
- sn – sinter
- ss – sandstone
- ssu – sandstone, unconsolidated
- tuff – tuff
- wsn – white sinter

SECTION 3050NW LOCATION



CALICO RESOURCES

Grassy Mountain Project

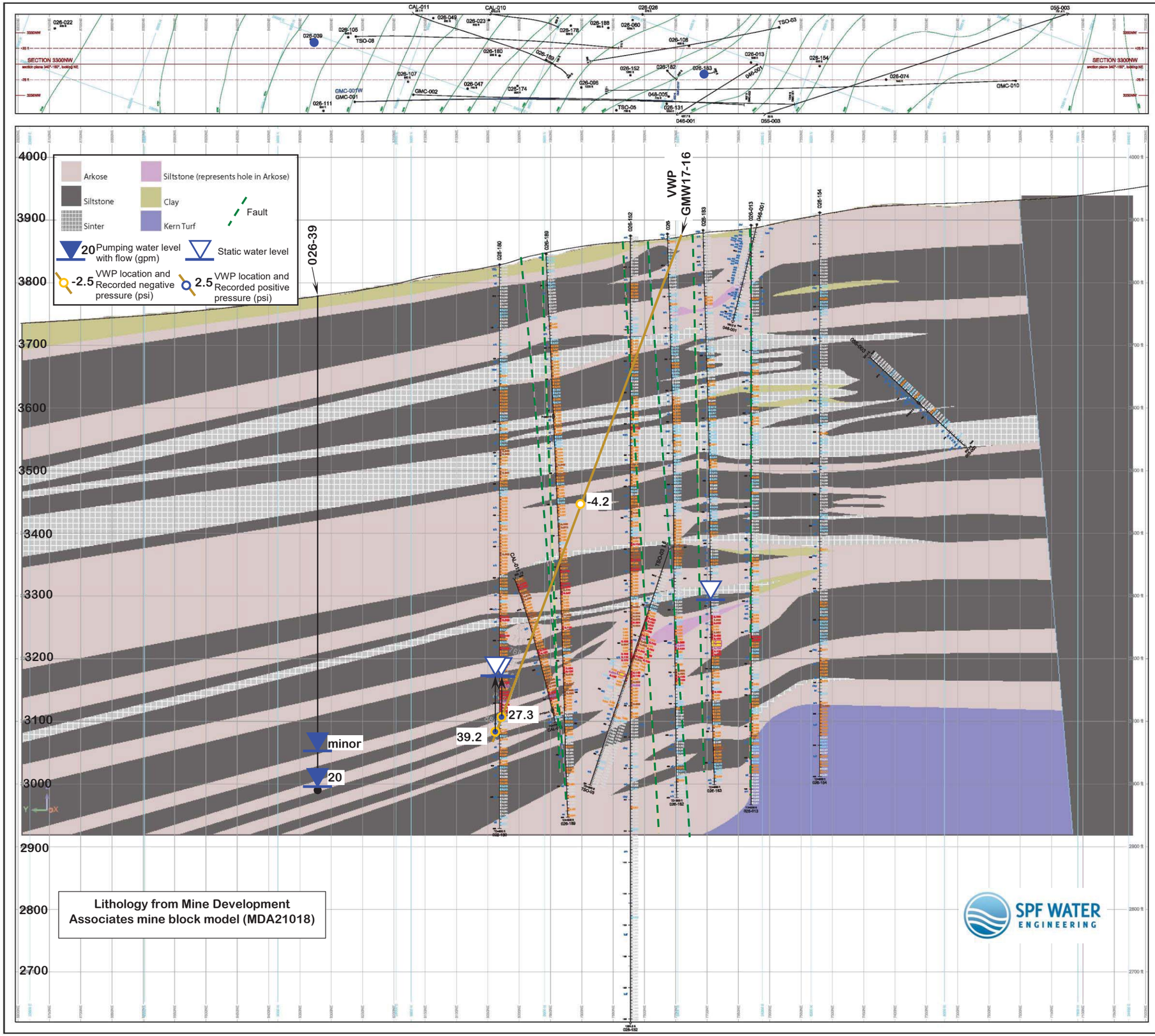
Section 3050NW
with Au Values
(looking N70°E)

July, 2012

Data from GM_Total_Database.xls
dated July 10, 2012
Section extracted using
Geosoft Target (Version 7.3 SP2)

Section generated and formatted by
Paul Freiertsbo, Mineral Logic
1839 Frey Lane, Missoula, Montana 59808
(406) 542-2304

Lithology from MDA Block Diagram



Section 3300NW
with Au Values
(looking N70°E)

Grassy Mountain Project
Malheur County, Oregon
July, 2012

1 inch

VERTICAL EXAGERATION 1:1
Sections every 50 feet
Drillholes projected ±25 feet from section line

SECTION 3300NW crosses:
- SECTION 8800NE @ 23793.5573, 9389.7879
- SECTION 7900NE @ 24101.3749, 8544.0619
- SECTION 7000NE @ 24409.1929, 7698.3355

HOLES PLOTTED ON SECTION (11 total)

026-013 026-152 026-154 026-180 026-182 026-183 026-189
046-001 055-003 CAL-011 TSO-03

DRILLHOLE NOTEATIONS

- drillhole collar
- drillhole entering section
- drillhole leaving section
- end of drillhole
- drillhole piercing section plane
- drillhole piercing back of section
- drillhole piercing front of section

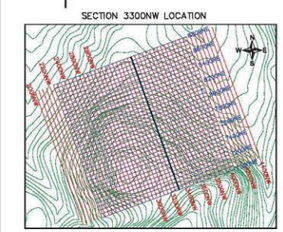
DOWNHOLE CHEMISTRY (ounce/ton Au)
values rounded to 3 decimal places

- 3.794 – Au 1.000 opt and higher
- 0.859 – Au 0.500 opt to 0.9999 opt
- 0.372 – Au 0.100 opt to 0.0499 opt
- 0.086 – Au 0.060 opt to 0.0999 opt
- 0.052 – Au 0.016 opt to 0.0599 opt
- 0.012 – Au 0.010 opt to 0.0159 opt
- 0.004 – Au less than 0.010 opt

DOWNHOLE LITHOLOGY (listed alphabetically)

- ark – arkose
- bas – basalt
- bxa – breccia
- clay – clay
- cmbxa – clay–matrix breccia
- cong – conglomerate
- fbxa – fault breccia
- flt – fault
- gvl – gravel
- hbxa – hydrothermal breccia
- mudst – mudstone
- NS – no sample
- ovbdn – overburden
- slt – siltstone
- sn – sinter
- ss – sandstone
- ssu – sandstone, unconsolidated
- tuff – tuff
- wsn – white sinter

SECTION 3300NW LOCATION



CALICO RESOURCES

Grassy Mountain Project

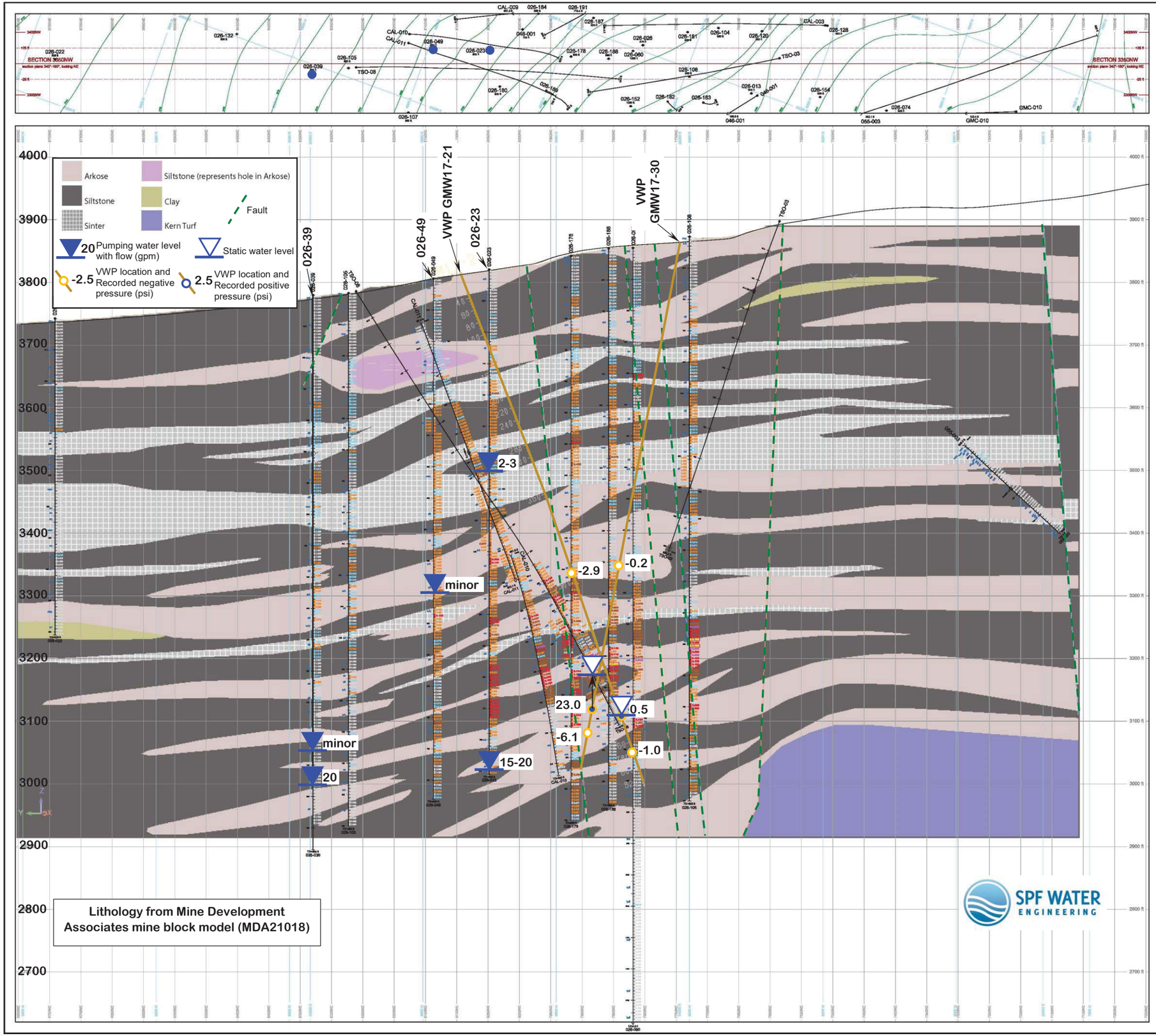
Section 3300NW
with Au Values
(looking N70°E)

July, 2012

Data from GM_Total_Database.xls
dated July 10, 2012
Section extracted using
Geosoft Target (Version 7.3 SP2)

Section generated and formatted by
Paul Frederick, Mineral Logic
1839 Frey Lane, Kiowa, Montana 59606
(406) 342-2254

Lithology from MDA Block Diagram



Section 3350NW
with Au Values
(looking N70°E)

Grassy Mountain Project
Malheur County, Oregon
July, 2012

1 inch

VERTICAL EXAGERATION 1:1
Sections every 50 feet
Drillholes projected ±25 feet from section line

SECTION 3350NW crosses:
- SECTION 8800NE @ 23840.5419, 9406.8890
- SECTION 7900NE @ 24148.3598, 8561.1627
- SECTION 7000NE @ 24456.1778, 7715.4366

HOLES PLOTTED ON SECTION (14 total)

026-022	026-023	026-039	026-049	026-060	026-105	026-108
026-178	026-188	055-003	CAL-010	CAL-011	TSO-03	TSO-08

DRILLHOLE NOTEATIONS

- drillhole collar
- drillhole entering section
- drillhole leaving section
- end of drillhole
- drillhole piercing section plane
- drillhole piercing back of section
- drillhole piercing front of section

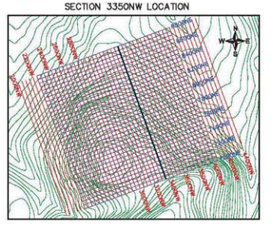
DOWNHOLE CHEMISTRY (ounce/ton Au)
values rounded to 3 decimal places

- 3.794 – Au 1.000 opt and higher
- 0.859 – Au 0.500 opt to 0.9999 opt
- 0.372 – Au 0.100 opt to 0.0499 opt
- 0.086 – Au 0.060 opt to 0.0999 opt
- 0.053 – Au 0.016 opt to 0.0599 opt
- 0.012 – Au 0.010 opt to 0.0159 opt
- 0.009 – Au less than 0.010 opt

DOWNHOLE LITHOLOGY (listed alphabetically)

ark	ark – arkose
bas	bas – basalt
bxa	bxa – breccia
clay	clay – clay
cmbxa	cmbxa – clay–matrix breccia
cong	cong – conglomerate
fbxa	fbxa – fault breccia
flt	flt – fault
gvl	gvl – gravel
hbxa	hbxa – hydrothermal breccia
mudst	mudst – mudstone
NS	NS – no sample
ovbdn	ovbdn – overburden
slt	slt – siltstone
sn	sn – sinter
ss	ss – sandstone
ssu	ssu – sandstone, unconsolidated
tuff	tuff – tuff
wsn	wsn – white sinter

SECTION 3350NW LOCATION



CALICO RESOURCES

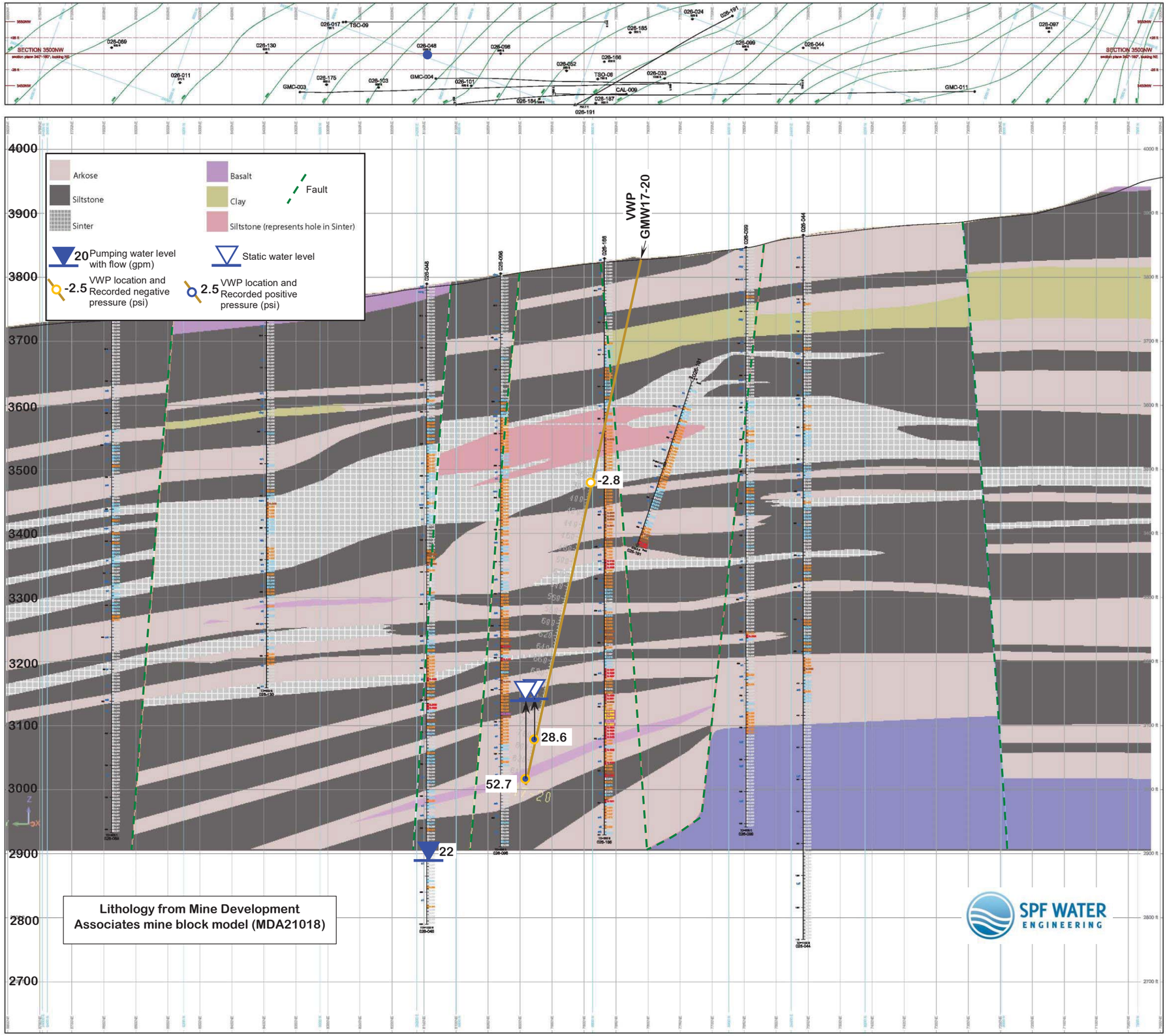
Grassy Mountain Project

Section 3350NW
with Au Values
(looking N70°E)
July, 2012

Data from GM_Total_Database.xls dated July 10, 2012
Section extracted using Geosoft Target (Version 7.2 SP2)

Section generated and formatted by Paul Frederiksen, Mineral Logic
1839 Troy Lane, Missoula, Montana 59808
(406) 542-2324

Lithology from MDA Block Diagram



Section 3500NW
with Au Values
(looking N70°E)

Grassy Mountain Project
Malheur County, Oregon
March, 2012

1 inch

VERTICAL EXAGERATION 1:1
Sections every 50 feet
Drillholes projected ±25 feet from section line

SECTION 3500NW crosses:
- SECTION 8800NE @ 23981.4957, 9458.1920
- SECTION 7900NE @ 24289.3135, 8612.4657
- SECTION 7000NE @ 24597.1315, 7766.7394

HOLES PLOTTED ON SECTION (8 total)

026-044 026-048 026-069 026-098 026-099 026-130 026-166 026-191

DRILLHOLE NOTEATIONS

- drillhole collar
- drillhole entering section
- drillhole leaving section
- end of drillhole
- drillhole piercing section plane
- drillhole piercing back of section
- drillhole piercing front of section

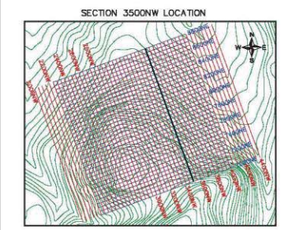
DOWNHOLE CHEMISTRY (ounce/ton Au)
values rounded to 3 decimal places

- 3.754 – Au 1.000 opt and higher
- 0.859 – Au 0.500 opt to 0.9999 opt
- 0.372 – Au 0.100 opt to 0.0499 opt
- 0.086 – Au 0.060 opt to 0.0999 opt
- 0.052 – Au 0.016 opt to 0.0599 opt
- 0.019 – Au 0.010 opt to 0.0159 opt
- 0.004 – Au less than 0.010 opt

DOWNHOLE LITHOLOGY (listed alphabetically)

- ark – arkose
- bas – basalt
- bxa – breccia
- clay – clay
- cmbxa – clay–matrix breccia
- cong – conglomerate
- fbxa – fault breccia
- flt – fault
- gvl – gravel
- hbxa – hydrothermal breccia
- mudst – mudstone
- NS – no sample
- ovbdn – overburden
- slt – siltstone
- sn – sinter
- ss – sandstone
- ssu – sandstone, unconsolidated
- tuff – tuff
- wsn – white sinter

SECTION 3500NW LOCATION



CALICO RESOURCES

Grassy Mountain Project

Section 3500NW
with Au Values
(looking N70°E)

March, 2012

Data from GM_Total_Datasheet.xls
dated March 1, 2012
Section extracted using
Geosoft Target (Version 7.3 SP2)

Section generated and formatted by
Paul Frederiks, Mineral Logic
1839 Frey Lane, Missoula, Montana 59808
(406) 542-2364

Lithology from MDA Block Diagram

Figure 16-1: Grassy Mountain Mine Cross Section Looking North

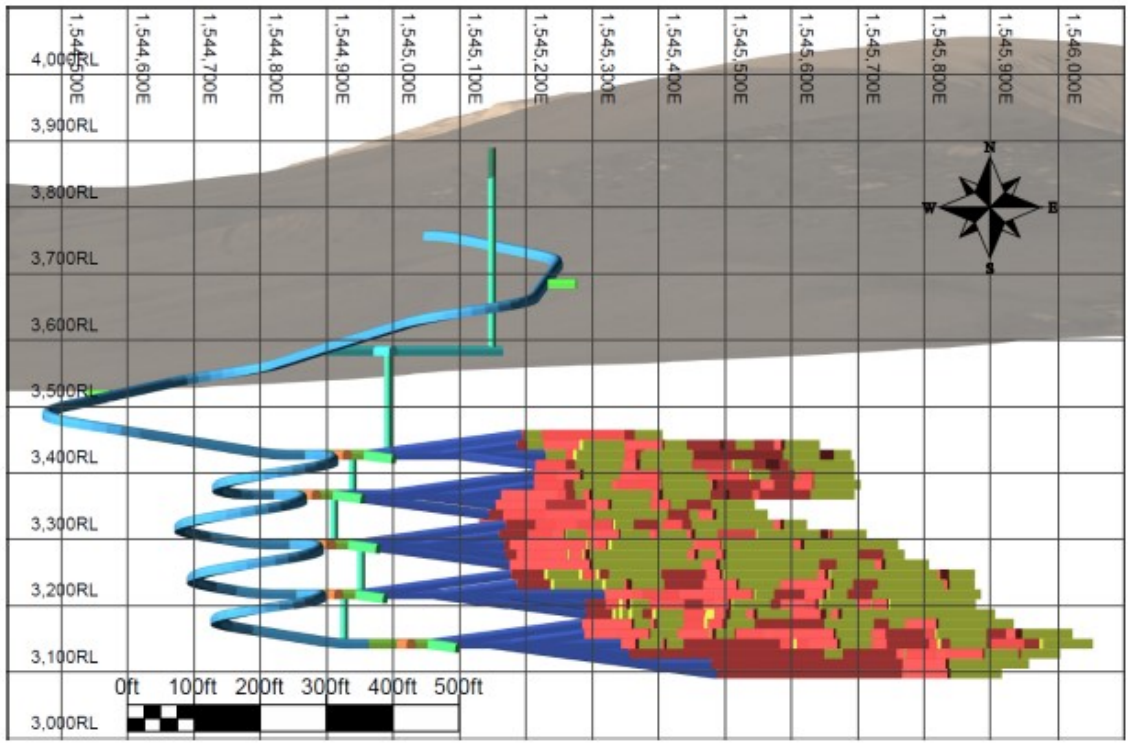
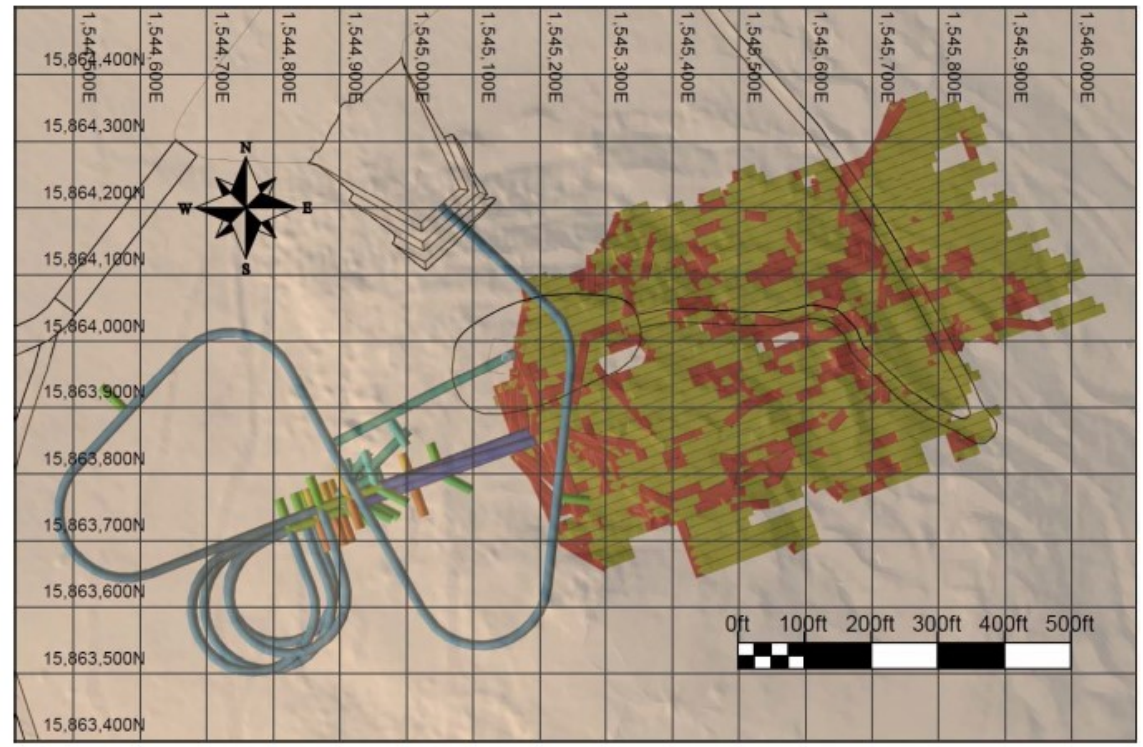


Figure 16-2: Proposed Grassy Mountain Mine Plan (plan view)



Cross-Section and Map View of the Mine Workings from Ausenco Feasibility Study prepared September 2020

Appendix F
Well Completion Details and Logs

Calico Well ID	OWRD Well Tag Number	OWRD Name	Alternate Name	Drill Method	Depth of First Water (ft)	Well Const. Depth (ft)	Screened Interval (ft)	Well Casing Diameter (in)	TOC Elevation[4]	Elevation Screened Interval (ft)	Water Level Elevation (9/26/2018)	Production (gpm)[2]	Screened Lithology[1]
59760	107462	MALH 2974	Middle Sweizer, TW-1	air rotary	160	203	163-203	6	3762.1	3599-3559	3673.43	+10	fractured basalt
59761	109400	MALH 2993	Lower Sweizer, MW-2	air rotary	100	118	97-117	4	3762.2	3665-3645	3673.48	+50	fractured basalt
59762	109371	MALH 2976, 2985	MW-3	air rotary	626	700	550-660	4	3724.8	3175-3065	3103.4	<1	siltstone
59763	109356	MALH 2994	TW-4	air rotary	277	323	293-323	6	3519.4	3226-3196	3239.03	+5	fractured volcanics
59764	107466	MALH 2986	MW-5	air rotary	270	300	279-299	4	3511.9	3233-3213	3238.24	+10	fractured sandstone
59765		MALH 2979	MW-6	air rotary	29	36	28-36	4	3446.5	3418-3410	dry	dry	shallow sandstone
59766	107468	MALH 2980	MWS-8	air rotary	only damp when drilled	45	25-45	4	3459.7	3435-3415	3426.68	+10	shallow sandstone
59767		MALH 2995	MWS-9	air rotary	dry	40	20-40	4	3495.3	3475-3455	dry	dry	shallow sandstone
59768		MALH 54197	MWS-10	air rotary	21	25	10-25	4	3480.6	3471-3456	3463.46	0.5	shallow sandstone
59770		MALH 2983	MW-11	air rotary	dry when drilled	424	374-424	4	3389.0	3015-2965	3241.71	+0.5	volcanic tuff
59772	109352	MALH 2984	Upper Sweizer, MWS-13	air rotary	125	207	165-205	4	3768.2	3603-3563	3673.5	+50	fractured basalt
26-092-915	109354	MALH 54071		unknown	unknown	915	228-268	2	3710.0	3482-3442	3633.55	unk	unk
57-1		MALH 54195		unknown	unknown	765	108-138	1.25	3770.6	3663-3633	3699.1	unk	unk
57-10		MALH 54196		unknown	unknown	500	126-156	1	3681.1	3555-3525	3635.67	unk	unk
89-2	109360	MALH 54072		unknown	200	425	386-406	2	3293.5	2907-2887	3235.54	unk	unk
Bishop	None	MALH 54046	Rye Field	cable	unknown	482	135-145	12	3391.5	3257-3247	3281	50	coarse gravel
BLM	109398	MALH 2277	Owyhee Ridge	cable	unknown	175	159-166	6	3579.6	3421-3414	3423.95	+12	white sand
GMW17-31	125168	MALH 54404		air rotary	dry when drilled	498	458-498	5	3722.0	3262-3222	3222.6	0	siltstone, sinter, clay
GMW17-32	125169	MALH 54405		air rotary	244	718	678-718	5	3702.1	3026-2986	3082.1	<1	Arkose, siltstone, Clay
GMW17-33	125170	MALH 54406		air rotary	243	338	238-338	5	3702.7	3465-3365	3452.16	<30	sinter, siltstone, tuff
GMW18-34	130031	MALH 54437		air rotary	dry	950	830-890	5	3953.3	3127-3067	dry	dry	Arkose, siltstone, Clay
GW-1	107469	MALH 2281	47-1	air rotary	140	155.5	135.5-155.5	4	3709.1	3573.5-3553.5	3654.18	60	gravel
GW-2	109357	MALH 2279	47-2	air rotary	dry when drilled	325	290-320	4	3827.5	3537-3507	3662.91	0	blue and grey clay
GW-3	107467	MALH 2278	47-3	air rotary	dry when drilled	350	320-350	4	3633.6	3314-3284	3401.68	<1	blue and grey clay
GW-3A		MALH 2579		air rotary	dry	420	380-420	2	3655	3275-3235	dry	dry	silt and clay
GW-3B		MALH 2576		air rotary	dry	340	80-100	2	3626	3546-3526	dry	dry	clay
GW-4	107460	MALH 54073		unknown	50	370	280-350	4	3342.7	3063-2993	3260.85	100	sandstone, congl, clay
GW-5		MALH 54194		air rotary	unknown	265	204-224	2	3413.0	3209-3189	3221.45	<1	tuff, clay
GW-6	109368	MALH 2578		air rotary	145	340	300-340	2	3377.3	3077-3037	3236.16	3-4	sandstone, congl, clay
Prod 1	107457	MALH 2275, 2511		air rotary	145	425	145-255, 325-355, 380-420	6	3436.4	3291-3181, 3111-3081, 3056-3016	3436.41	30-100[3]	sandstone, blue clay, and hard sandstone
PW-1	109353	MALH 2276		air rotary	320	520	320-340, 400-420	6	3709.1	3389-3369, 3309-3289	3654.66	25-35[3]	brown clay and sand; coarse sandstone
PW-4	109351	MALH 2206		air rotary	280	375	280-300, 340-360	6	3341.4	3061-3041, 3001-2981	3261.39	175-250[3]	sandstone and conglomerate

1 - as reported on the drillers log
2 - based on short-term testing by driller during or following construction
3 - based on long-term test pumping
4 - surveyed with the exception of GW-3A, GW-3, GMW-17-31, GMW17-32, GMW17-33, and GMW18-34

Table C1. Well Completion Details

Attachment C2. Well Logs

MALH 2974 RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/44E/8dd

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59760

(1) OWNER/PROJECT:

WELL NO. TW-1

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

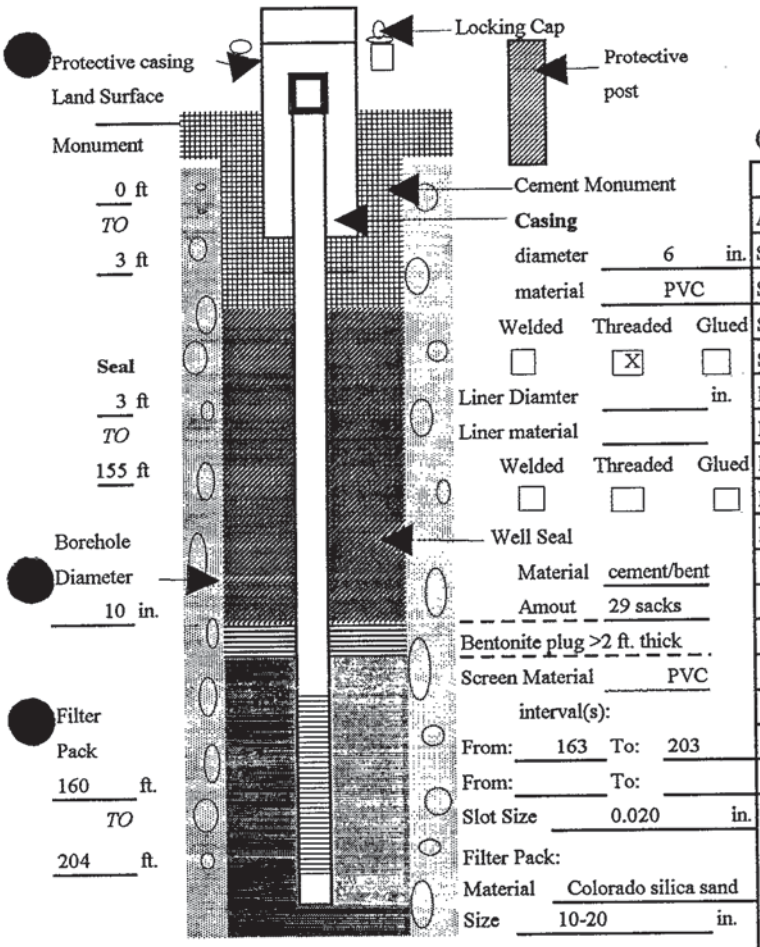
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 203 ft.

59760 / MALH 2974, 2991



Casing
diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]

Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]

Well Seal
Material cement/bent
Amout 29 sacks
Bentonite plug >2 ft. thick

Screen Material PVC
interval(s):
From: 163 To: 203
From: To:
Slot Size 0.020 in.

Filter Pack:
Material Colorado silica sand
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield 45 GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. NW 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN, VALE, OR
3. Tax lot number of well location UNKNOWN
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Feet below land surface. Date October 11, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

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Depth at which was first found

From	To	Estimated Flow Rate	SWL
160	205	45-50	88

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Alluvial silt with basalt float	0	11	
Siltstone, brown, with basalt pebbles	11	15	
Siltstone, Brown	15	40	
Siltstone, Brown, with basalt cobbles	40	65	
Siltstone, brown w/ increasing basalt	65	90	
Basalt, Red with 40% brown siltstone	90	109	
Basalt, Red and Black, vesicular, fine grained	109	160	
Basalt, vesicular w/clay in vesicles	160	185	
Basalt w/increased oxidation	185	200	
Basalt w/20% clays	200	205	

Date Started October 4, 1993 Completed October 11, 1993

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10096
Signed [signature] Date 1-12-94

2991 Malh

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0)

JAN 26 1994

WATER RESOURCES DEPT.
SALEM, OREGON

22S/44E/8db

Start Card # 59760

(1) OWNER/PROJECT:

WELL NO. TW-1

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

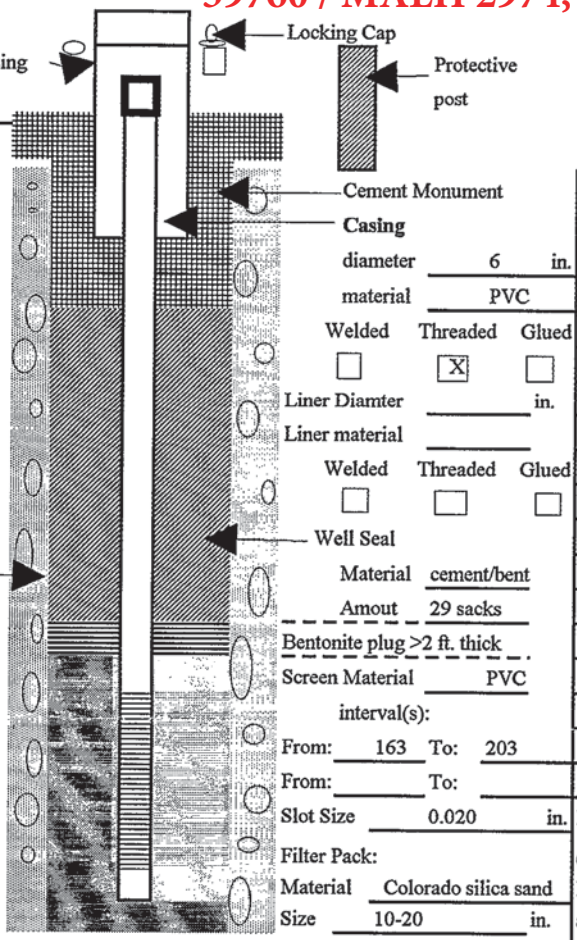
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth completed well 203 ft.

59760 / MALH 2974, 2991



Casing diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]

Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]

Material cement/bent
Amout 29 sacks
Bentonite plug >2 ft. thick

Screen Material PVC
interval(s):
From: 163 To: 203
From: To:
Slot Size 0.020 in.

Filter Pack:
Material Colorado silica sand
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield 45 GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. NW 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN, VALE, OR
3. Tax lot number of well location UNKNOWN
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Feet below land surface. Date October 11, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL
160	205	45-50	88

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Alluvial silt with basalt float	0	11	
Siltstone, brown, with basalt pebbles	11	15	
Siltstone, Brown	15	40	
Siltstone, Brown, with basalt cobbles	40	65	
Siltstone, brown w/ increasing basalt	65	90	
Basalt, Red with 40% brown siltstone	90	109	
Basalt, Red and Black, vesicular, fine grained	109	160	
Basalt, vesicular w/clay in vesicles	160	185	
Basalt w/increased oxidation	185	200	
Basalt w/20% clays	200	205	

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SALEM, OREGON

Date Started October 4, 1993 Completed October 11, 1993

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10096
Signed [signature] Date 1-12-94

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-085)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2993

22S/44E/8aa

Start Card # 59761

9

(1) OWNER/PROJECT:

WELL NO. MW-2

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

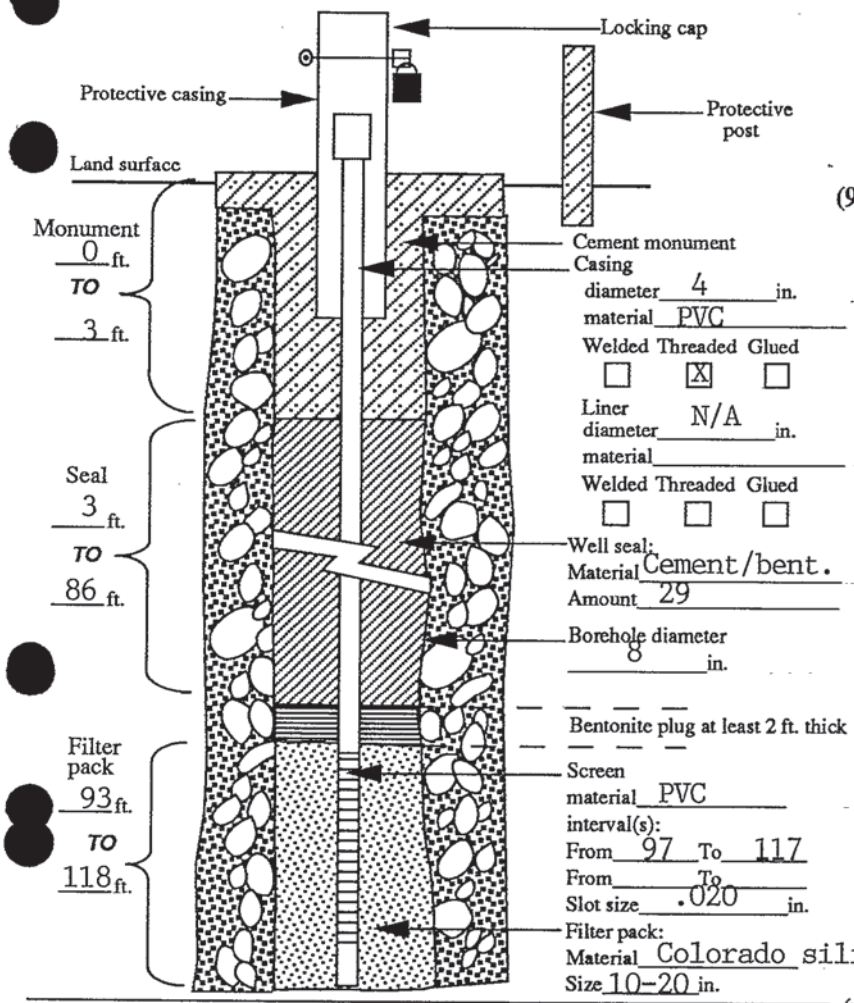
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

59761 / MALH 2993

Special Standards Yes [ ] No [X]
Depth of completed well 118 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability — Yield — GPM
Conductivity — PH —
Temperature of water 56 °F/C Depth artesian flow found — ft.
Was water analysis done? [ ] Yes [ ] No
By whom? —
Depth of strata to be analyzed. From — ft. to — ft.
Remarks: —

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur
Township 22 (N or S) Range 44E (E or W) Section 8
1. NE 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

88 Ft. below land surface. Date 10/04/93
Artesian Pressure — lb/sq. in. Date —

(8) WATER BEARING ZONES:

Depth at which water was first found 100

From	To	Est. Flow Rate	SWL
100	120	60	88

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Aluvian silt & cobbles	0	13	
Clayey siltstone brn	13	15	
Siltstone brown	15	36	
Clayey siltstone brn	36	65	
Siltstone with basalt	65	70	
Basalt with some	70		
siltstone		72.5	
Basalt	72.5	80	
Basalt with some	80		
calcite filling			
vesicles		92	
Basalt with fractures	92	105	
Basalt with clay seams	105	120	

Date started 10/02/93 Completed 10/04/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 1098 Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10046 Date 1/12/94

OWNER: NEWMONT Gold

PROJECT: GRASSY MOUNTAIN

59761 / MALH 2993

LOCATION: NE.NE SECT 8, T-22, R-44-EAST PIT AREA - SWITZER RES

COORDINATES N. _____ E. _____ ELEV. _____

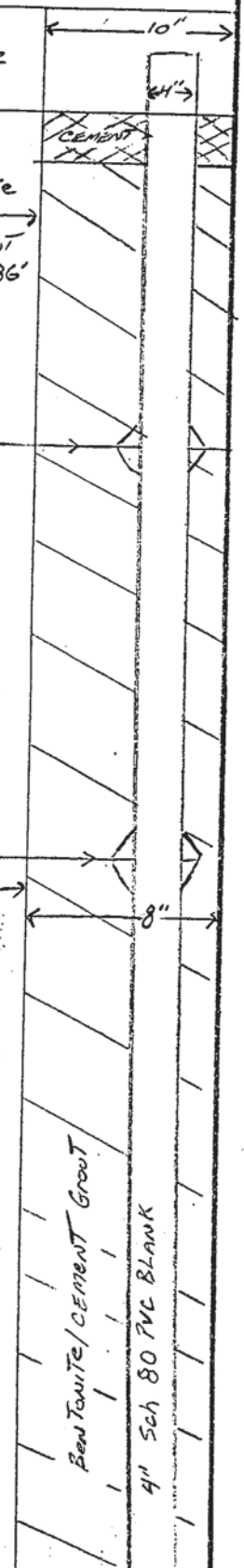
BORING NO. MW-2

TYPE OF DRILLING: AIR ROTERY

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 3

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
									3' RISER
		Alluvium							4% Bentonite to 96% CEMENT Grout From 3' to 86'
15		Clayey siltstone - Brown							13' - Dry
		Siltstone, Brown							15' Centralizer @ 18' - Damp @ 20'
20									
25									
30									
35									
		Clayey siltstone, Brown							36' - Dry
40									Centralizer @ 46'
45									10" Borehole to 43'-8" Bore hole to 120'
50									
55									
60									
65									
		Siltstone w/Basalt							65' - Dry
70		Basalt w/some siltstone							70' - Drill
75		Basalt	Vesicular Top of Flow?						72.5'
80									



XW HW MM SW FR VW W MS S VS

* NOTE: PVC CASING IS LOCATED IN CENTER OF BORE HOLE

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER: NEWMONT Gold

PROJECT: Grassy Mountain

LOCATION: NE.NE, Sec 8, T22, R44 - East Pit Area - Switzer Res

COORDINATES N. _____ E. _____ ELEV. _____

59761 / MALH 2993

BORING NO. MW-2

TYPE OF DRILLING: Air Rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 3 OF 3

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	ROD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
85		BASALT w/some CALCITE FILLING VESICLES	SWL @ 88.0						4% BENTONITE 96% CEMENT From 3' to 86'
90									BENTONITE PLUG From 86' to 93'
95		BASALT	FRACTURES @ 93						SILICA SAND From 93' to 118'
100			Water @ 100'						CENTRALIZER @ 96'
105			25 gpm @ 105'						105'
110		BASALT w/INTERSTIAL CLAY	60 gpm @ 110'						CENTRALIZER @ 116'
115									1' SAND PACK From 117' to 118'
120			60 gpm @ 120'						NATIVE MATERIALS CAVE IN @ 118'
		130 H							130 H

8"

4"

BENTONITE CEMENT GROUT

BENTONITE PELLETS PLUG

SCH 80 PVC BLANK 4"

10-20 COLORADO SILICA SAND

0.02 SCH 80 PVC SCREEN 4"

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

JAN 18 1994
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2976

22S / 44E / 8bd

Start Card # 59762

(1) OWNER/PROJECT:

WELL NO. MW-3

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

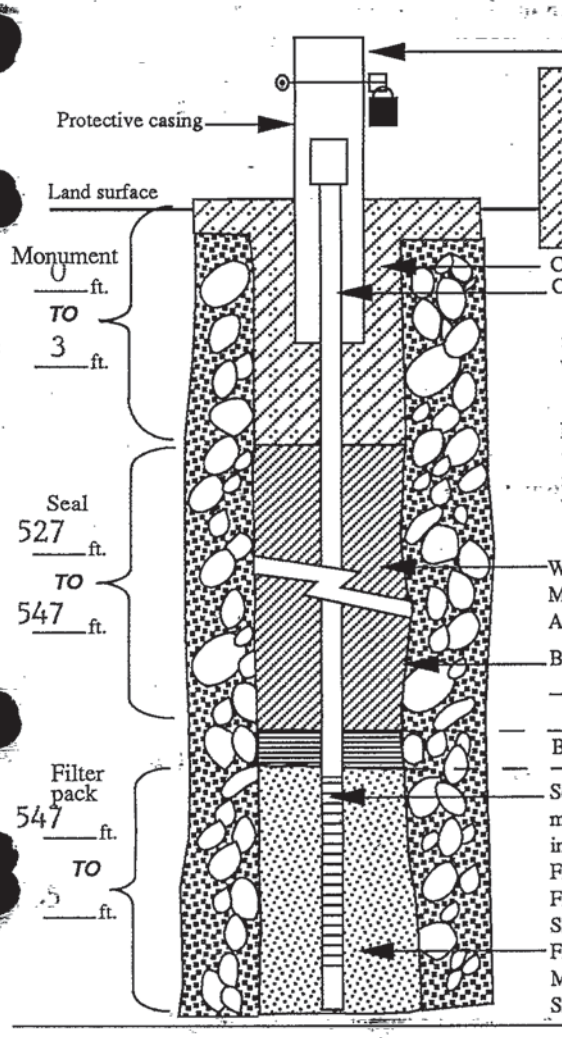
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

59762 / MALH 2976

Special Standards Yes [ ] No [X]
Depth of completed well 657.5 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability ____ Yield ____ GPM
Conductivity ____ PH ____
Temperature of water 56 °F/C Depth artesian flow found ____ ft.
Was water analysis done? [ ] Yes [X] No
By whom? ____
Depth of strata to be analyzed. From 0 ft. to ____ ft.
Remarks: See attached sheet for sand pack

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur
Township 22S (N or S) Range 44E (E or W) Section 8
1. SE 1/4 of NW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

626 Ft. below land surface. Date 10/29/93
Artesian Pressure ____ lb/sq. in. Date ____

(8) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation ____

Material	From	To	SWL
****See Attached Sheet*******			

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SALEM, OREGON

Date started 10/16/93 Completed 10/29/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10098 Date 1/13/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-13-94

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SPF 15-1

59763 / MALH 2994

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59763

(1) OWNER/PROJECT:

WELL NO. TW-4

Name Newmont Gold

Address 316 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

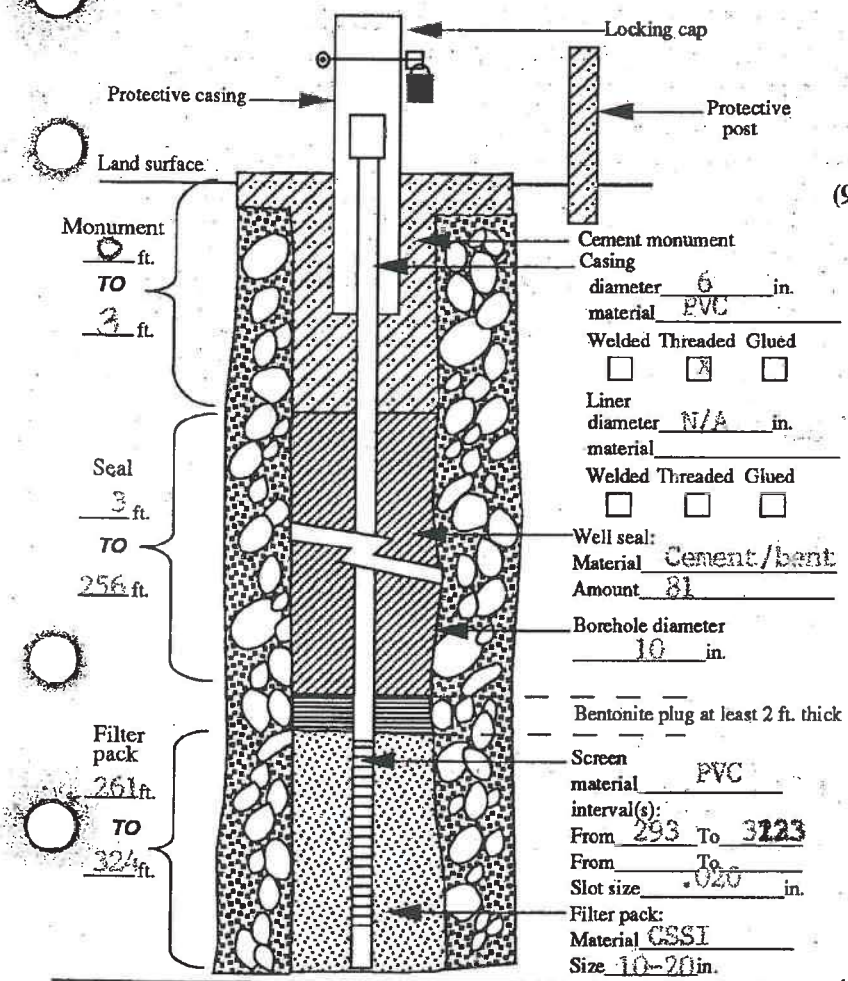
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth of completed well 324 ft.



Cement monument
Casing
diameter 6 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner
diameter N/A in.
material
Welded [ ] Threaded [ ] Glued [ ]
Well seal:
Material Cement/bent
Amount 81
Borehole diameter
10 in.
Bentonite plug at least 2 ft. thick
Screen
material PVC
interval(s):
From 293 To 323
From To
Slot size .020 in.
Filter pack:
Material CSSI
Size 10-20 in.

(5) WELL TEST: N/A

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Permeability Yield GPM

Conductivity PH

Temperature of water 50 °F/C Depth artesian flow found ft.

Was water analysis done? [ ] Yes [ ] No

By whom?

Depth of strata to be analyzed. From ft. to ft.

Remarks:

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22S (N or S) Range 44E (E or W) Section 7

1. SW 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

280 Ft. below land surface. Date 10/15/93

Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Alluvium	0	3	
Light brown tuff	3	18	
Clayey siltstone tuff	18	43	
Tuff and Rhyolite	43	163	
Gray tuff	163	215	
Gray tuff and Rhyolite	215	305	277
Rhyolite	305	324	

Date started 10/11/93 Completed 10/15/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10298 Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-12-94

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

SPF 15-2

59764 / MALH 2986

Start Card # 59764

(1) OWNER/PROJECT:

WELL NO. MW-5

Name Newmont Gold

Address 316 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

- [X] New construction
- [ ] Repair
- [ ] Recondition
- [ ] Conversion
- [ ] Deepening
- [ ] Abandonment

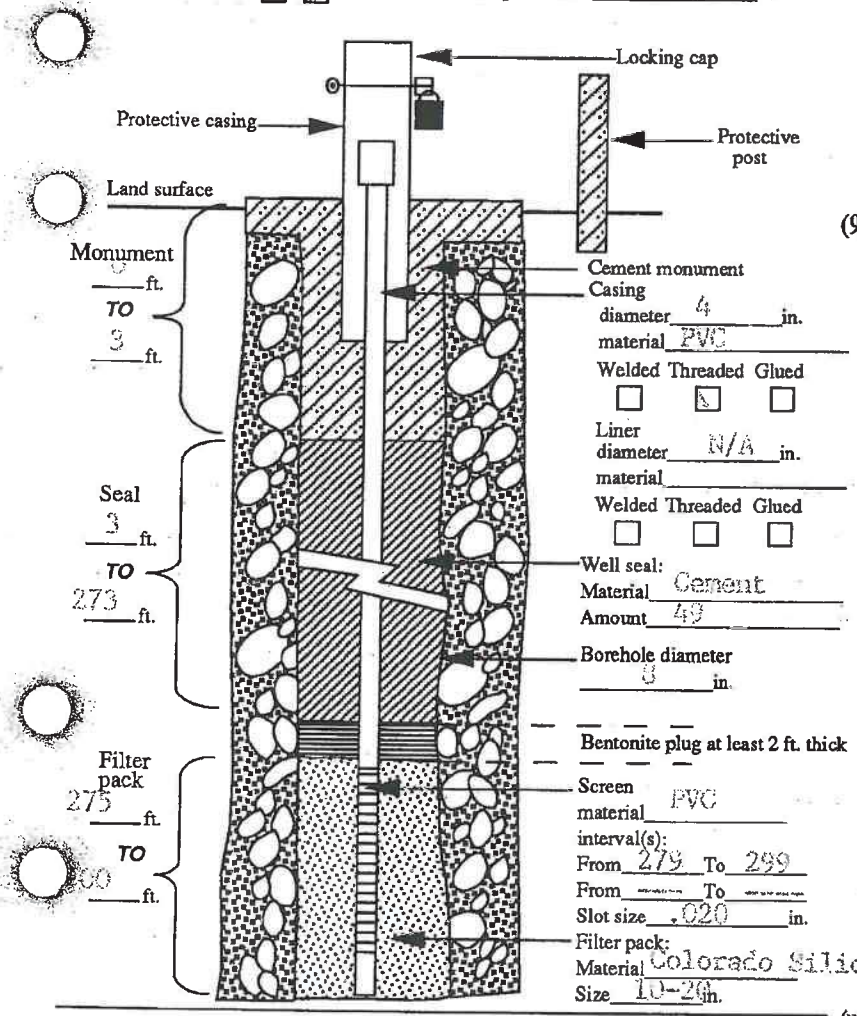
(3) DRILLING METHOD

- [X] Rotary Air
- [ ] Rotary Mud
- [ ] Cable
- [ ] Hollow Stem Auger
- [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth of completed well 300 ft.



(5) WELL TEST:

- [ ] Pump
- [ ] Bailer
- [X] Air
- [ ] Flowing Artesian

Permeability ____ Yield ____ GPM

Conductivity ____ PH ____

Temperature of water 56 °F/C Depth artesian flow found ____ ft.

Was water analysis done? [ ] Yes [X] No

By whom? ____

Depth of strata to be analyzed. From ____ ft. to ____ ft.

Remarks: ____

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22 S (N or S) Range 44 E (E or W) Section 7

1. SW 1/4 of NE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

270 Ft. below land surface. Date 10/11/93

Artesian Pressure ____ lb/sq. in. Date ____

(8) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation ____

Material	From	To	SWL
****See Attached Sheet*******			

Date started 10/4/93 Completed 10/11/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed ____ MWC Number 1425

Date ____

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed ____ MWC Number 1096

Date 1-13-94

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59764 / MALH 2986

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59764

(9) WELL LOG

Material	From	To	SWL
Aluvium Culluviam sandstone gravels with rhyolite boulders & cobbles	0	7	
Rhyolite tuff tan gray red	7	17	
Rhyolite with some clay matrix/possible fracture	17	22	
Rhyolite red/tan/gray	22	45	
Yellow/tan/gray rhyolite with greyish clay	45	50	
Rhyolite	50	85	
Rhyolite yellow sandstone tan gray	85	91	
Sandstone tan gray friable medium grained	91	96	
Rhyolite pink/tan/gray	96	116	
Basalt	116	117	
Rhyolite yellow/tan silicified	117	120	
Rhyolite tan pink gray clay rock chips	120	130	
Rhyolite tan green	130	152	
Basalt forest green chlor ? dike	152	155	
Green sandstone	155	160	
Rhyolite clay gray tan	160	167	
Rhyolite tan/pink/gray	167	170	
Life gray clay all rhyolite	170	187	
Rhyolite green/tan/red	187	190	
Gray clay	190	211	
Basalt blue gray	211	213	
Clay green gray	213	215	
Rhyolite red/tan/gray flow banding	215	220	
Clay gray green	220	230	
Weathered rhyolite medium green gray	230	237	
Hard to medium gray alt rhyolite	237	240	
Green alt rhyolite dolomite	240	248	
Clay lite green	248	255	
Clay brown gray	255	262	
Siltstone grayish green with rhyolite	262	275	
Clay yellow	275	281	
Clay gray	281	282.5	
Sandstone yellow with red rhyolite	282.5	296	
Sandstone silicified pale yellow white	296	303	
Sandstone white	303	305	

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59762 / MALH 2976, 2985

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59762

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SALEM, OREGON

(9) Well Log

Material	From	To	SWL
Alluvium sand and cobbles	0	1	
Arkose sandstone buff medium grained course	1	19	
Sandstone orange to buff gray green course to medium grained	19	25	
Sandstone olive green medium grained	25	36	
Sandstone orange to red medium grained to fine	36	42	
Sandy clayey siltstone pink purple/yellow streaks	42	57	
Clayey siltstone light olive green and tan	57	78	
Claystone orange light purple yellow	78	94	
Silicified tan buff and brown	94	109	
Silty claystone purple gray and yellow	109	115	
Clayey siltstone gray/pink/yellow	115	160	
Clayey siltstone orange/yellow/gray	160	178	
Clayey siltstone gray	178	180	
Clayey siltstone tan and gray partial silicification	180	187	
Clayey siltstone tan grading into gray decrease in silicificaiton	187	215	
Clayey siltstone gray grading into tan increaded silicification	215	220	
Clayey siltstone highly silicified tan to brown	220	256	
Clayey siltstone tan grading into gray decreasing silicification from high to moderate	256	305	
Clayey siltstone gray grading into tan increasing silicification	305	312	
Silicified siltstone tan to light brown	312	332	
Clayey siltstone tan to gray	332	345	
Clayey siltstone gray grading into tan with increasing silicification	345	355	
Clayey siltstone tan	355	360	
Clayey siltstone green and brown	360	385	
Clayey siltstone gray and brown	385	401	
Clayey siltstone grey with brown and charcoal mottling	401	435	
" gray	435	501	
Clayey siltstone gray	501	515	
Clayey siltstone charcoal	515	525	
Clayey siltstone gray	525	570	
Clayey siltstone gray charcoal	570	625	
Clayey siltstone gray	625	650	
Silicified siltstone gray	650	700	

Hole was bridging partial sand pack and native materials from 611-635
Native material around screen at 635 - 657

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OR 690-240-095)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2985 22S/44E/8bd Start Card # 59762

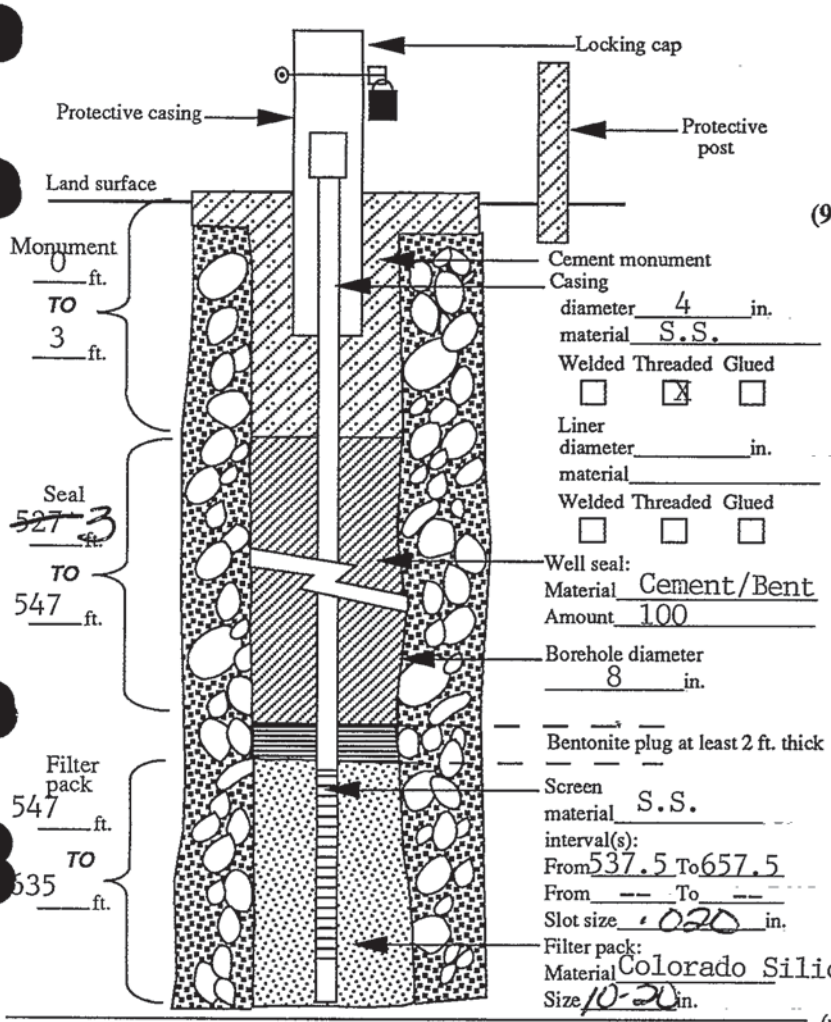
9

(1) OWNER/PROJECT:
WELL NO. MW-3
Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION 59762 / MALH 2976, 2985
Special Standards Yes [ ] No [X] Depth of completed well 657.5 ft.



(5) WELL TEST:
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability ---- Yield ----- GPM
Conductivity ---- PH -----
Temperature of water 56 °F/C Depth artesian flow found --- ft.
Was water analysis done? [ ] Yes [X] No
By whom? ----
Depth of strata to be analyzed. From ----- ft. to ----- ft.
Remarks: See attached sheet for sand pack

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description
Well Location: County Malheur
Township 22S (N or S) Range 44E (E or W) Section 8
1. SE 1/4 of NW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale OR
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:
626 Ft. below land surface. Date 10/29/93
Artesian Pressure ____ lb/sq. in. Date

(8) WATER BEARING ZONES:
Depth at which water was first found ------

From	To	Est. Flow Rate	SWL

(9) WELL LOG:
Ground elevation

Material	From	To	SWL
****See Attached Sheet*******			

RECEIVED
MAR 14 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 10/16/93 Completed 10/29/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Signed [signature] MWC Number 1098 Date 1/13/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed [signature] MWC Number 10096 Date 1-13-94

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

59762 / MALH 2976, 2985

RECEIVED
JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

RECEIVED
MAR 14 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Newmont Gold
318 A Street
West Vale, OR 97918

Start Card # 59762

(9) Well Log

Material	From	To	SWL
Alluvium sand and cobbles	0	1	
Arkose sandstone buff medium grained course	1	19	
Sandstone orange to buff gray green course to medium grained	19	25	
Sandstone olive green medium grained	25	36	
Sandstone orange to red medium grained to fine	36	42	
Sandy clayey siltstone pink purple/yellow streaks	42	57	
Clayey siltstone light olive green and tan	57	78	
Claystone orange light purple yellow	78	94	
Silicified tan buff and brown	94	109	
Silty claystone purple gray and yellow	109	115	
Clayey siltstone gray/pink/yellow	115	160	
Clayey siltstone orange/yellow/gray	160	178	
Clayey siltstone gray	178	180	
Clayey siltstone tan and gray partial silicification	180	187	
Clayey siltstone tan grading into gray decrease in silicificaiton	187	215	
Clayey siltstone gray grading into tan increaded silicification	215	220	
Clayey siltstone highly silicified tan to brown	220	256	
Clayey siltstone tan grading into gray decreasing silicification from high to moderate	256	305	
Clayey siltstone gray grading into tan increasing silicification	305	312	
Silicified siltstone tan to light brown	312	332	
Clayey siltstone tan to gray	332	345	
Clayey siltstone gray grading into tan with increasing silicification	345	355	
Clayey siltstone tan	355	360	
Clayey siltstone green and brown	360	385	
Clayey siltstone gray and brown	385	401	
Clayey siltstone grey with brown and charcoal mottling	401	435	
" gray	435	501	
Clayey siltstone gray	501	515	
Clayey siltstone charcoal	515	525	
Clayey siltstone gray	525	570	
Clayey siltstone gray charcoal	570	625	
Clayey siltstone gray	625	650	
Silicified siltstone gray	650	700	

Hole was bridging partial sand pack and native materials from 611-635
Native material around screen at 635 - 657

OWNER : Newmont Gold

PROJECT : Grassy Mtn

LOCATION : ~~Grassy~~ Mtn (Grabgrass Dit area)

COORDINATES N. _____ E. _____ ELEV. _____

59764 / MALH 2986

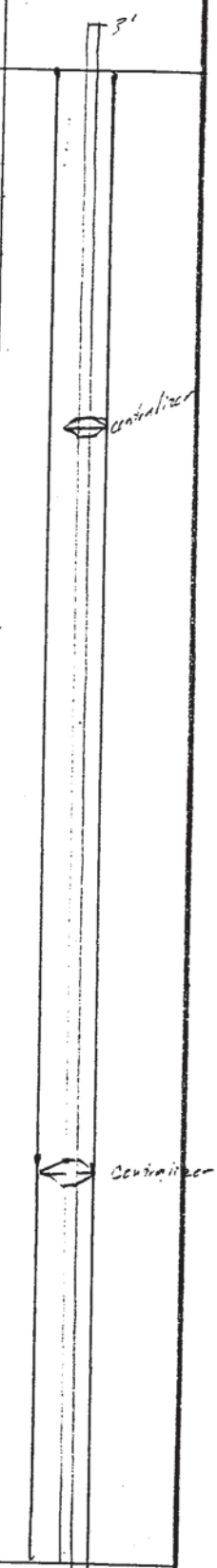
BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 1 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #
			Alluvium/colluvium sandstone grands w/ Rhyolitic boulders and cobbles.	Dry						
5										MW-5 (5)
			Rhyolite, rhyolitic tuff tan, gray red w/ flow banding and biotite phenocrysts some yellowish chalced	Dry						
10										(10)
				add water						
15										(15)
17			Rhyolite w/ some clay in matrix, possible fracture or rubble zone	fracture zone (?) clay present						
20										(20)
22			Rhyolite, red, tan, gray	@28' discont. cyclone due to poor recovery of sample						
										(25)
30										(30)
										(35)
				No sample Recovery						No sample taken (40)
40										
										(45)
			yellow, tan gray Rhyolite w/ grayish clay							
50										(50)
			Rhyolite	No sample recovery clown out around collar						No sample (55)
60										(60)
										(65)
70										(70)
										(75)
80										(80)



XW HW MM SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER : Newmont Gold

PROJECT : Grassy Mtn

59764 / MALH 2986

LOCATION : Near cut grass pits

COORDINATES N. _____ E. _____ ELEV. _____

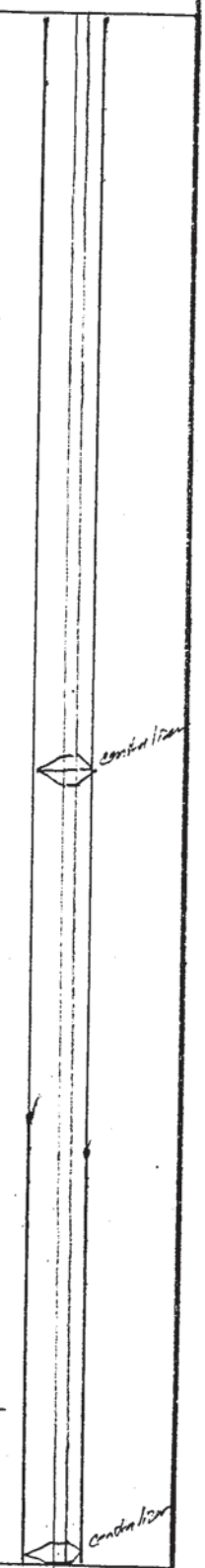
BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip Sample #
80			Rhyolite, tan, gray, red	Poor sample recovery						MW-5 (85)
			Rhyolite w/ 5% yellow chalcedony							(90)
90			Sandstone - tan gray friable medium grained	good sample recovery dry						(95)
			Rhyolite pink, tan, gray w/ some sand medium to pieces, no flow	dry w						(100)
100			banding observed	Add water for drilling						(105)
110										(110)
										(115)
			basalt dike							
			Rhyolite yellow, tan silicified							(120)
120			Rhyolite, tan, pink, gray	gray clay w/ rock chips						(125)
130			Rhyolite lt. tan-green	silicified rhyolite w/ chalcedony white - yellow						(130)
										(135)
140										(140)
										(145)
150										(150)
52			Alt. basalt forest green chloritic - dike	green chloritic alt. basalt (?) w/ 1-2% pyrite						
54			green sandstone							(155)
160										(160)



LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

OWNER: Newmont Gold

PROJECT: Grassy Mtn

59764 / MALH 2986

LOCATION: [redacted] Crab [redacted] pits [redacted]

COORDINATES N. _____ E. _____ ELEV. _____

BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 3 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #
100			Rhyolite clay - gray tan	Rhyolite						MW-5 (165)
			Rhyolite - tan pink gray							
170			lt. gray clay alt. Rhyolite							(170)
										(175)
180										(180)
										(185)
			Rhyolite green, tan, clay red alt w/ zones of	Some water ≤ 1g/m						
190			gray clay clay	produced from the alternating clay rock zones						(190)
										(195)
200			green alt.							(200)
										(205)
			clay gray							
210			basalt blue gray							(210)
			clay green-gray							(215)
			Rhyolite mixed colors rd, tan, gray w/ flow banding							
220										(220)
			clay gray green							(225)
230										(230)
			med green-gray covered Rhyolite	alt. chlorite w/ fresh biotite						(235)
240			clay lt-med gray alt Rhyolite							(240)

centralizer

centralizer

XW HW MM SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER: Newmont Gold

PROJECT: Grassy Mtn

59764 / MALH 2986

LOCATION: [redacted] Graybgrass pits [redacted]

COORDINATES N. _____ E. _____ ELEV. _____

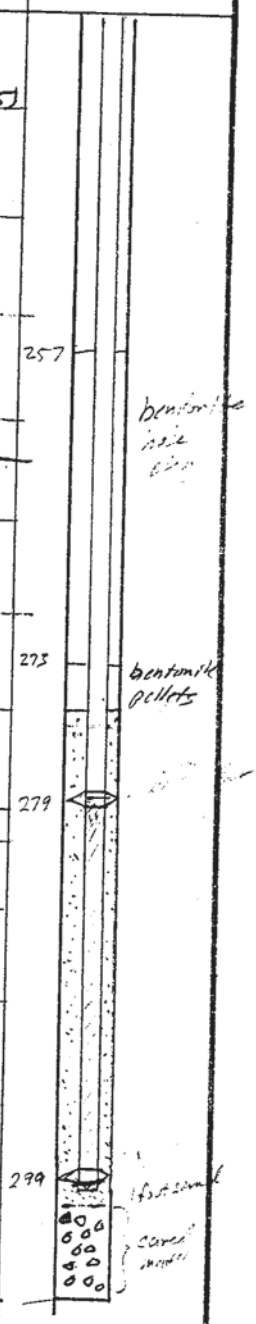
BORING NO. MW-5

TYPE OF DRILLING: air rotary

ANGLE FROM HORIZONTAL: 90°

PAGE 4 OF 4

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock Chip sample #
240			green alt Rhyolite chlorite	Rhyolite						MW-5 (245)
			clay - lt. green							
250										(250)
			brown gray clay							(255)
260										(260)
			grayish green Siltstone (sandy) w/ rhyolite, possible contamination	No alteration of rocks						(265)
270										(270)
			yellow clay							275
280			grayish @ 81'							280
			yellow sandstone w/ red rhyolite no alteration and flow banding	Rhyolite						285
290										290
										295
			Silicified sandstone pale yellow - white	brown colored water						
300				yellow-gray water						300
			White Sandstone							305
			TD 305'							
310										
320										



20.25 screen 0.4 plug

LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

SPF 16-1

59765 / MALH 2979

Start Card # 59765

(1) OWNER/PROJECT:

WELL NO. MW-6

Name Newmont Gold

Address 318 A Street

City West Vale State OR Zip 97918

(2) TYPE OF WORK:

[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

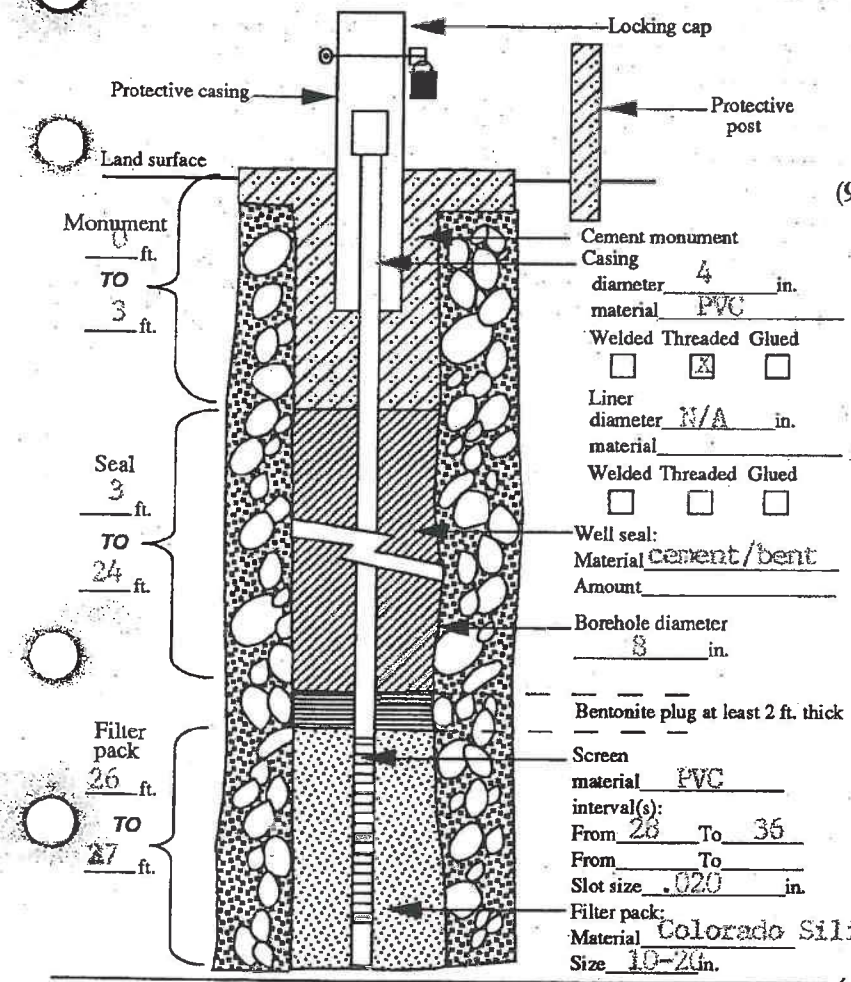
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth of completed well 36 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Permeability — Yield — GPM

Conductivity — PH —

Temperature of water Dry °F/C Depth artesian flow found — ft.

Was water analysis done? [ ] Yes [X] No

By whom? —

Depth of strata to be analyzed. From — ft. to — ft.

Remarks: Wet but no measurable water

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur

Township 22S (N or S) Range 44E (E or W) Section 6

1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

23 Ft. below land surface. Date 10/04/93

Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation —

Material	From	To	SWL
Soil	0	2	
Sandy siltstone medium	2		
tan brown		5	
Silty sandstone medium	5		
brown silt green			
tinge friable		20	
Sandstone silty olive	20		
brown		26.5	
Clayey sandstone med.	26.5		
gray brown		29	
Sandstone medium gray	29		
brown		35	
Siltstone dark gray	35	36	
Clayey siltstone med	36		
dark gray		37	

Date started 10/03/93 Completed 10/04/93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 1078 Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 1078 Date 1-12-94

59765 / MALH 2979

OWNER : Newmont Gold

PROJECT : Grassy Mtn

BORING NO. MW-6

LOCATION :

COORDINATES N. E. ELEV.

PAGE 1 OF 2

ELEVATION DEPTH	GRAPHIC LOG	SOIL CLASSIFICATION	SAMPLES	STANDARD PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DESCRIPTION OF SOILS
2			MW-6 (5)			Sandy loam, tan brown very thin, on bedrock @ 2'
						see page 2 of for rock descr

LOG OF BORING

OWNER : Newmont Gold 59765 / MALH 2979

PROJECT : G[redacted] Mtn [redacted]

LOCATION :

COORDINATES N. _____ E. _____ ELEV. _____

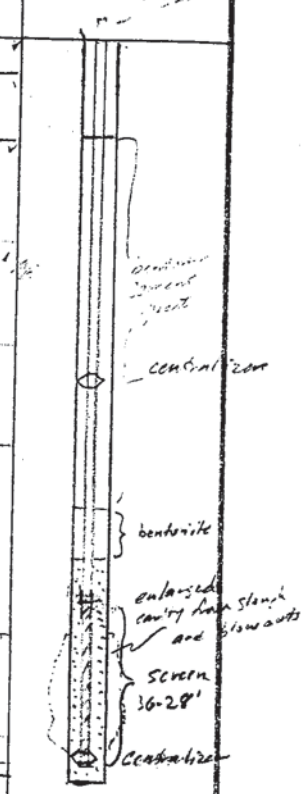
BORING NO. MW-6

TYPE OF DRILLING: Rotary air

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 2

ELEVATION	DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS ~~and moisture~~	CORE RECOVERY (%)	RQD. (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock Chip Sample #
			Soil							
			Sandy siltstone, medium tan-brown							MW-6 (5)
			Silty sandstone, medium brown w/ slt. green tinge friable	@5' start becoming slty damp						
10				slt. damp						MW-6 (10)
				slt. damp						MW-6 (15)
20			sandstone (silty), olive brown	slt. damp						MW-6 (20)
	26.5									MW-6 (25)
	29.0		clayey sandstone med gray brown	slt. damp						
30			Sandstone, med. grained gray brown	drilling wet						MW-6 (30)
	35									MW-6 (35)
	36		Siltstone - dk gray							
	TD. 37.1'		clayey siltstone med dk gray							
40										
50										
60										
70										



TD 37.1'

LOG OF BORING

XW HW MM SW FR — VW W MS S VS

HYDRO-GEO CONSULTANTS

SPF 16.2

59766 / MALH 2980

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095)

Start Card # 59766

(1) OWNER/PROJECT:

WELL NO. MWS-8

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

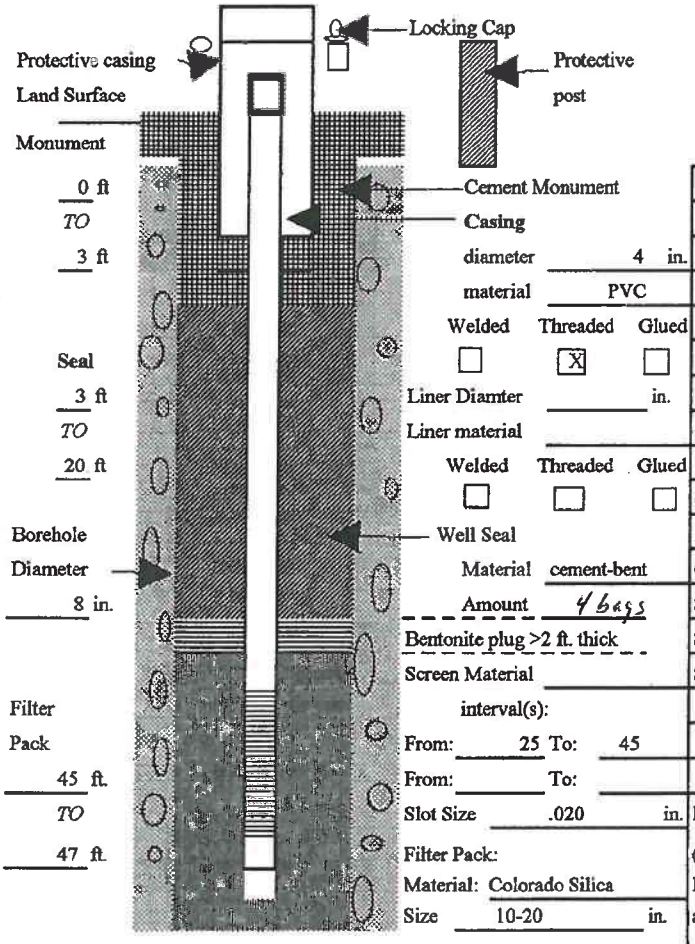
[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 45 ft.



Casing diameter 4 in. material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Material cement-bent
Amount 4 bags
Bentonite plug >2 ft. thick
Screen Material
interval(s):
From: 25 To: 45
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield N/A GPM
Conductivity pH
Temperature of water F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks: bottom hole backfilled w/pellets&sand 47-76.5'
Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 6
1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tax lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

Dry to 45.5 Feet below land surface. Date: October 2, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Gravely sandy loam, med. gray brown	0	10	
dry.			
Siltstone tan-gray	10	29	
Sandstone-yellow-tan	29	32.5	
Sandstone - orange	32.5	33.5	
Sandstone, yellow-tan	33.5	46.5	
Clayey siltstone, gray and tan with sand	46.5	48	
Sandstone, tan-brown	48	59	
Clayey siltstone w/sand, tan-gray	59	62	
Sandstone, yellow-tan	62	64	
Carbonaceous shale	64	68	
Siltstone, med. gray-brown			
Sandstone, tan-orange	68	71	
Sandstone, light tan	71	76.5	

Date Started 10-1-93 Completed 10-2-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. MWC Number 10096
Signed [signature] Date 1-12-94

59766 / MALH 2980

OWNER : Newmont Gold

PROJECT : Grassy Mtn

BORING NO. MWS-8

LOCATION :

COORDINATES N. _____ E. _____ ELEV. _____

PAGE 1 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	SOIL CLASSIFICATION	SAMPLES	STANDARD PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DESCRIPTION OF SOILS
5		SM	MWS-8 (5)		dry	light grayish brown, loose, sandy loam with alluvial gravels (alluvium/colluvium)
10		CL	MWS-8 (10)		damp	lt. tan-gray, clay loam with minor (< 10%) gravels and sand. transition between bedrock and alluvium.
15						↘ at 10' bedrock see sheet 2 of 2 for Description and log.

LOG OF BORING

OWNER: Newmont Gold 59766 / MALH 2980 BORING NO. MWS-8

PROJECT: Grassy Mtn TYPE OF DRILLING: rotary air

LOCATION: [redacted] ANGLE FROM HORIZONTAL: 90°

COORDINATES N. _____ E. _____ ELEV. _____ PAGE 2 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Rock chip sample #	OTHER DATA: Feet below ground surface	OTHER DATA: Well Description
10		see description on page 1 of 2 for soil log								5.0	5" bentonite cement grout
15		Siltstone, lt. tan-gray	damp						MWS-8 (15)		
20			slightly damp						MWS-8 (20)	20.0	
25			damp						MWS-8 (25)	23.0	bentonite pellets
30		Sandstone, yellow-tan friable, to unconsolidated	slightly moist						MWS-8 (30)		centralizer
		Sandstone, orange	moist								CSS sand pack
35		sandstone yellow-tan friable	slightly moist Fe ox nodules 1-2 cm in lenses assoc. w/ organic matl						MWS-8 (35)		
40			slightly moist						MWS-8 (40)		screen
45									MWS-8 (45)		
		clayey Siltstone, gray-tan w/ sand	slightly moist							45.8	centralizer
50		Sandstone, tan brown	slightly moist						MWS-8 (50)	47.0	CSS sand
55									MWS-8 (55)	50.0	bentonite pellets
60		Clayey Siltstone with Sand, tan-gray	damp						No sample taken MWS-8 (60)		CSS Sand
		Sandstone, yellow-tan	damp							60	
65		Carbonaceous Shale-Siltstone, medium grayish brown w/ organic matl	damp						MWS-8 (65)		bentonite pellets
70		Sandstone, tan-orange	damp						MWS-8 (70)	69	
75		Sandstone, light tan yellow, friable, fine grained w/ muscovite grains common	slightly damp						MWS-8 (75)	73	CSS sand
76.5		T.D. 76.5							blow out hole no sample taken	T.D. 76.5	bentonite pellets

XW HW MM SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

9

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

JAN 26 1994
WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2995

22S/44E/5ca

Start Card # 59767

(1) OWNER/PROJECT: WELL NO. MWS-9

Name Newmont Gold
Address 318 A Street
City West Vale State OR Zip 97918

(2) TYPE OF WORK:

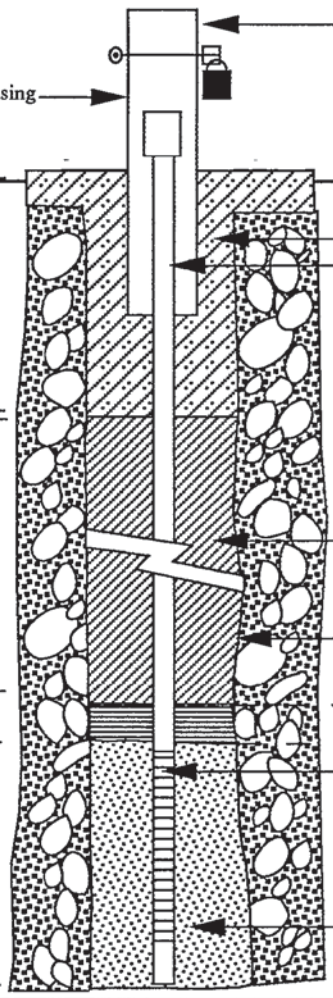
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth of completed well 40 ft.



Monument 0 ft. TO 3 ft.

Seal 3 ft. TO 13 ft.

Filter pack 15 ft. TO 41 ft.

Cement monument
Casing diameter 4 in. material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner diameter N/A in. material
Welded [ ] Threaded [ ] Glued [ ]
Well seal: Material Cement/bent Amount 5
Borehole diameter 8 in.
Bentonite plug at least 2 ft. thick
Screen material PVC
interval(s): From 20 To 40
From To
Slot size .020 in.
Filter pack: Material Colorado Silica Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Permeability — Yield — GPM
Conductivity — PH —
Temperature of water 56 °F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom? —
Depth of strata to be analyzed. From — ft. to — ft.
Remarks: —

Name of supervising Geologist/Engineer Mike Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County Malheur 59767 / MALH 2995
Township 22 S (N or S) Range 44 E (E or W) Section 5
1. NE 1/4 of SW 1/4 of above section.
2. Street address of well location Grassy Mountain, Vale
3. Tax lot number of well location Unknown
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

Dry to 42.8 ft. below land surface. Date 10/02/93
Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found —

From	To	Est. Flow Rate	SWL

(9) WELL LOG: Ground elevation —

Material	From	To	SWL
Pebbles & silty soil	0	8	
Silty claystone brown	8	10	
Claystone light brown	10		
yellow streaks		14	
Claystone gray clayey	14		
siltstone very low			
sand buff		16.5	
Sandstone white very	16.5		
fine grained inter			
bedded with claystone		23	
Sandstone yellow	23		
med grained feldspar			
quartz		38	
Claystone orange & brn	38		
shaley with yellow			
streaks		40	
Claystone gray	40	45	

Date started 10/01/93 Completed 10/02/93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed [signature] MWC Number 10098 Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096 Date 1-12-94

OWNER : Newmont Gold

PROJECT : Grassy Mountain

LOCATION : 300' N of Solution Pond - 200' E of Road.

COORDINATES N. _____ E. _____ ELEV. _____

59767 / MALH 2995

BORING NO. MWS-9

TYPE OF DRILLING: Air Rotery

ANGLE FROM HORIZONTAL: 90°

PAGE 2 OF 2

ELEVATION @ 45' DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
5		Alluvial Materials							Riser To 5'
10		Silty Claystone, Light Brown							Cement 5'
		Claystone Light Brown w/ Yellow Streaks							4% Bentonite Powder 96% Cement
15		Claystone, Gray-Clayey Siltstone Very Low Sand, Buff							8" Damp
		Sandstone, White Very Fine Grained / Interbedded w/ Claystone	Very Thin Claystone Lens						10' Dry
20									14' Dry
									16.5' Centralizer
25		Sandstone, Yellow Medium Grained ~30% Feldspar 70% Quartz	Very Fine Grained Buff, Sandstone Grades into Medium grained Yellow Sandstone						Dry
30									23' Damp @ 29'
35									10-20 Colorado Silica Sand
40		Claystone, Orange + Brown w/ Yellow Streaks	Shaley						38' Centralizer
		Claystone, Gray							Damp 40
			BOH @ 45'						0.020 Sch 40 PVC 4"
									41' Bentonite Pellet Plug
									45'

*Note: Bentonite Pellet Plug From 15' to 15'

Sch 40 PVC Blank 4"

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

WELL I.D. # L

59768 / MALH 54197

(1) LAND OWNER Well Number 59768
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 25 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	4				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
10	25					☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68724 Longitude -117.35668
Township 22 ☐ N ☑ S Range 43 ☐ E ☐ W WM.
Section 5 SW 1/4 NE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3478

Material	From	To	SWL

Date started Completed

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

59768 / MALH 54197

OWNER : NEWMONT Gold
PROJECT : Grassy Mountain
LOCATION : 50'E of Topsoil Stockpile Area ~1000'N of Waste Rock Area
COORDINATES N. _____ E. _____ ELEV. _____

BORING NO. MW S-10
TYPE OF DRILLING: Air Rotery
ANGLE FROM HORIZONTAL: 90°
PAGE 2 OF 2

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	CORE RECOVERY (%)	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA
5		Alluvial Materials							2.7' Riser
10									Cement 4% Bentonite Powder to 96% Cement from 5' to 2' → Bentonite Pellets from 7' to 5' → Sand from 26' to 7' →
15		Sandstone, Light Brown to Orange: Low Clay ~35% Feldspar 65% Qtz	Coarse Grained Friable						14' - Damp
		Claystone Orange w/ Yellow Streak							17' - Damp
20		Silty Claystone, Red	Shale, Oxidized						19' - Damp
		Silty Claystone, Grey	Shale						21' - Wet
		Sandy Claystone Orange	Coarse Grained						23.5 - Wet
			BoH						1/8 Colorado Silica Sand From 26' to 25'

4" Sch 40 PVC Blank

10-20 Colorado Silica Sand

4" Sch 40 PVC 0.020 Screen From 25' to 15'

XW HW MW SW FR — VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

SPF 2B

59769 / MALH Unknown

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OR 690-240-095)

Start Card # 59769

(1) OWNER/PROJECT:

WELL NO. MWS-7

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [X] Abandonment

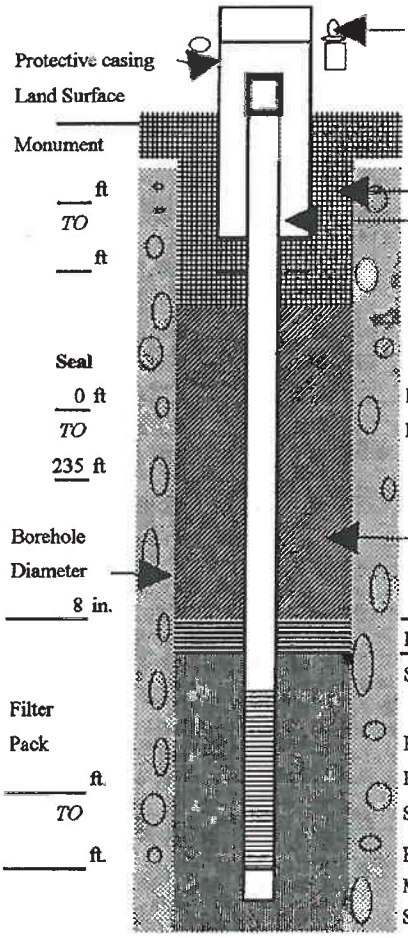
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X]

Depth completed well 235 ft.



Casing diameter ____ in. material ____ Welded [ ] Threaded [ ] Glued [ ]

Liner Diamter ____ in. Liner material ____ Welded [ ] Threaded [ ] Glued [ ]

Well Seal Material Cement-bent Amount 52

Bentonite plug >2 ft. thick

Screen Material ____ interval(s): From: ____ To: ____ From: ____ To: ____ Slot Size ____ in.

Filter Pack: Material: ____ Size ____ in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Permeability ____ Yield ____ GPM

Conductivity ____ pH ____

Temperature of water ____ F/C Depth artesian flow found ____ ft.

Was water analysis done? [ ] Yes [ ] No

By whom? ____

Depth of strata to be analyzed. From ____ To ____ ft.

Remarks: well was abandoned - dry hole

Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR

Township 22S (N/S) Range 44E (W/E) Section 12

SE 1/4 NE 1/4 of above section.

2. Street address of well location GRASSY MOUNTAIN VALE, OREGON

3. Tax lot number of well location N/A

4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

dry Feet below land surface. Date 10/13/93

Artesian Pressure ____ lb/sq.in. Date ____

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Soil - alluvium	0	5	
Green lithic tuff	5	87	
Rhyolite-dacite	87	100	
Lithic tuff - tan	100	105	
Rhyolite - Dacite	105	130	
Green - tan lithic tuff	130	160	
Green tuff with rhyolite fragments	160	175	
Green-gray tuff	175	235	

Date Started 10-12-93 Completed 10-13-93

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098

Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed [signature] MWC Number 10096

Date 1-12-94

59770 / MALH 2983

MALH 2983

RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/43E/13 bca

STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-095) Start Card # 59770

(1) OWNER/PROJECT:

WELL NO. MWS-11

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

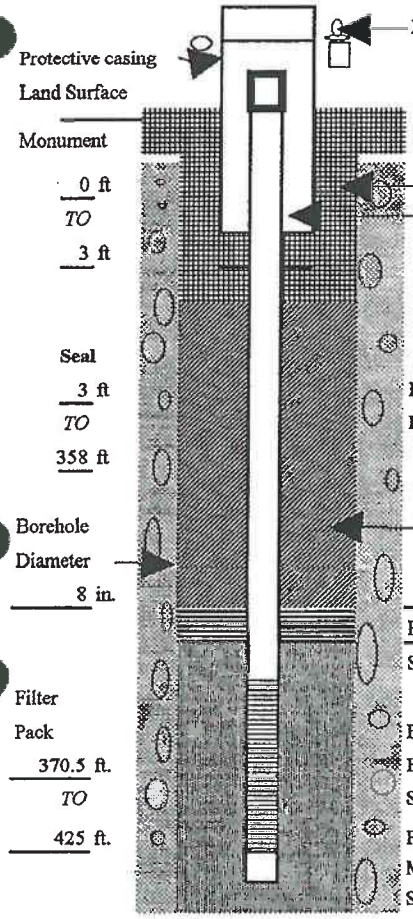
[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 207 ft.



Casing
diameter 4 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Well Seal
Material Cement-bent
Amount 78
Bentonite plug >2 ft. thick
Screen Material PVC
interval(s):
From: 374 To: 424
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield not measurable GPM
Conductivity pH
Temperature of water 56 F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks: water recovered in hole, but very low production

Name of supervising Geologist/Engineer M. Pappalardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 43E (W/E) Section 13
1. NE1/4 of NW 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tas lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

141 Feet below land surface. Date: October 17, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

RECEIVED FEB 4 1994 WATER RESOURCES DEPT. SALEM, OREGON

From	To	Estimated Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Brown sitly fine sand with cobbles	0	30	
Gray green lithic tuff	30	84	
Tuff and Rhyodacite	84	150	
Airfall lithic tuff	150	330	
Rhyo-dacite clasts	330	395	
Rhyo-dacite conglomerate	395	424	

Date Started 10-14-93 Completed 10-17-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. MWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction , alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed [signature] MWC Number 10096 Date 1-17-94

MAIH 2984 RECEIVED JAN 18 1994 WATER RESOURCES DEPT. SALEM, OREGON

22S/44E/8dd

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0[illegible])

Start Card # 59772

(1) OWNER/PROJECT:

WELL NO. MWS-13

Name Newmont Gold

Address 318 A. Street

City West Vale State OR Zip 97018

(2) TYPE OF WORK:

[X] New Construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

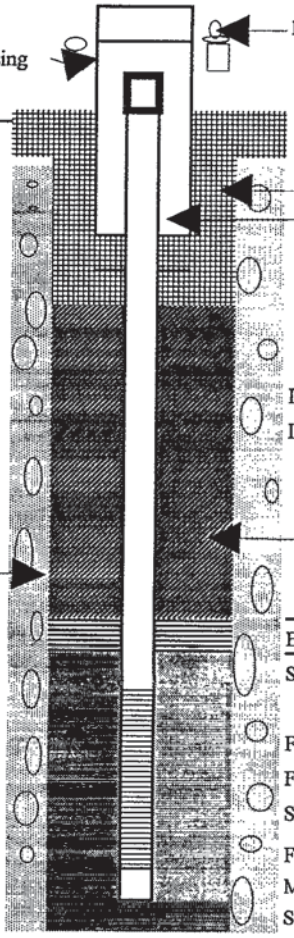
(3) DRILLING METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Hollow Stem Aug. [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth completed well 207 ft.

59772 / MALH 2984



Casing
diameter 4 in.
material PVC
Welded [ ] Threaded [X] Glued [ ]
Liner Diamter in.
Liner material
Welded [ ] Threaded [ ] Glued [ ]
Material Cement-bent
Amount 35
Bentonite plug >2 ft. thick
Screen Material PVC
interval(s):
From: 146 To: 206
From: To:
Slot Size .020 in.
Filter Pack:
Material: Colorado Silica
Size 10-20 in.

(5) WELL TEST:

[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian
Permeability Yield GPM
Conductivity pH
Temperature of water 51o F/C Depth artesian flow found ft.
Was water analysis done? [ ] Yes [X] No
By whom?
Depth of strata to be analyzed. From To ft.
Remarks:
Name of supervising Geologist/Engineer M. Pappolardo

(6) LOCATION OF WELL By legal description

Well Location: County MALHEUR
Township 22S (N/S) Range 44E (W/E) Section 8
1. SE 1/4 of SE 1/4 of above section.
2. Street address of well location GRASSY MOUNTAIN
VALE, OREGON
3. Tax lot number of well location N/A
4. ATTACH MAP WITH LOCATION IDENTIFIED.

RECEIVED FEB 4 1994 WATER RESOURCES DEPT. SALEM, OREGON

(7) STATIC WATER LEVEL:

95 Feet below land surface. Date OCTOBER 19, 1993
Artesian Pressure lb/sq.in. Date

(8) WATER BEARING ZONES:

Depth at which was first found

From	To	Estimated Flow Rate	SWL
125	207	35	95'

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Brown silt and clayey silt	0	9	
with cobbles			
Brown siltstone with basalt	9	27	
pebbles			
Brown siltstone with some	27	137	
some claystone			
Basalt weathered and	137	156	
fractured			
Basalt, very weathered	156	165	
Basalt	165	207	

Date Started 10-18-93 Completed 10-19-93

(unbonded) Monitor Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oergon well construction standards. Materials used and information reported above are true to the best knowledge and belief. WWC Number 10098
Signed [signature] Date 1/12/94

(bonded) Monitor Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. WWC Number 10096
Signed [signature] Date 1-12-94

MALH 54071

26-092-915 / MALH 54071 WELL I.D. # L 109354

(1) LAND OWNER Well Number 26-092
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.67244 Longitude -117.35586
Township 22S N or S Range 44E E or W. WM.
Section 8 SW 1/4 NE 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
71.67 ft. below land surface. Date 6/7/2012
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
General geology of the area consists of a series of intercalated sedimentary and volcanic formations of late Tertiary age. This well was originally drilled as an exploratory hole in 1988 or 1989. The hole was drilled to a total depth of 915 feet. OWRD staff sounded the well to a depth of 93 feet in 2012. The well could be blocked, or it may have collapsed. Construction at land surface consists of a 2" gray plastic casing inside of an 8.5" steel casing.			

Date started Completed 12/31/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. mine site. Reports are housed in OWRD Groundwater Section library.

COMPILED BY: Josh Hackett, OWRD Groundwater Section

DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

57-1 / MALH 54195

WELL I.D. # L _____

(1) LAND OWNER Well Number 57-1
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 765 ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	1.25				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
108	138					☑	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.66796 Longitude -117.36421
Township 22 ☑ N ☐ S Range 43 ☑ E ☐ W WM.
Section 8 NW 1/4 SW 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
____ ft. below land surface. Date
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3769

Material	From	To	SWL

Date started ____ Completed ____

SOURCE OF DATA/INFO
Data in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

57-10 / MALH 54196

WELL I.D. # L _____

(1) LAND OWNER Well Number 57-10
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other _____

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 500 ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other _____
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
126	156					☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.66796 Longitude -117.36421
Township 22 ☑ or ☐ N or ☐ S Range 43 ☐ or ☐ E or ☐ WM.
Section 8 NW 1/4 NE 1/4
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 3681

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL

Date started _____ Completed _____

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT

11/16/2000

MALH 54072

89-2 / MALH 54072

WELL I.D. # L 109360

(1) LAND OWNER Well Number 89-2
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	+2.8	?	Protective	☒	☐	☐	☐
	2"	+2.5	?		☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68335 Longitude -117.39706
Township 22S N or S Range 43E E or W. WM.
Section 2 NW 1/4 SE 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:
52.54 ft. below land surface. Date 6/7/2012
Artesian pressure ____ lb. per square inch Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL
200		8 gpm	
265		30 gpm	
305		37 gpm	
340		47 gpm	
365		55 gpm	

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
See attached lithologic log			
sounded to a depth of 129 feet by OWRD staff on 6/7/2012			

Date started ____ Completed 12/31/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. Mine site. Reports are housed in OWRD Groundwater Section library.

COMPILED BY: Josh Hackett, OWRD Groundwater Section

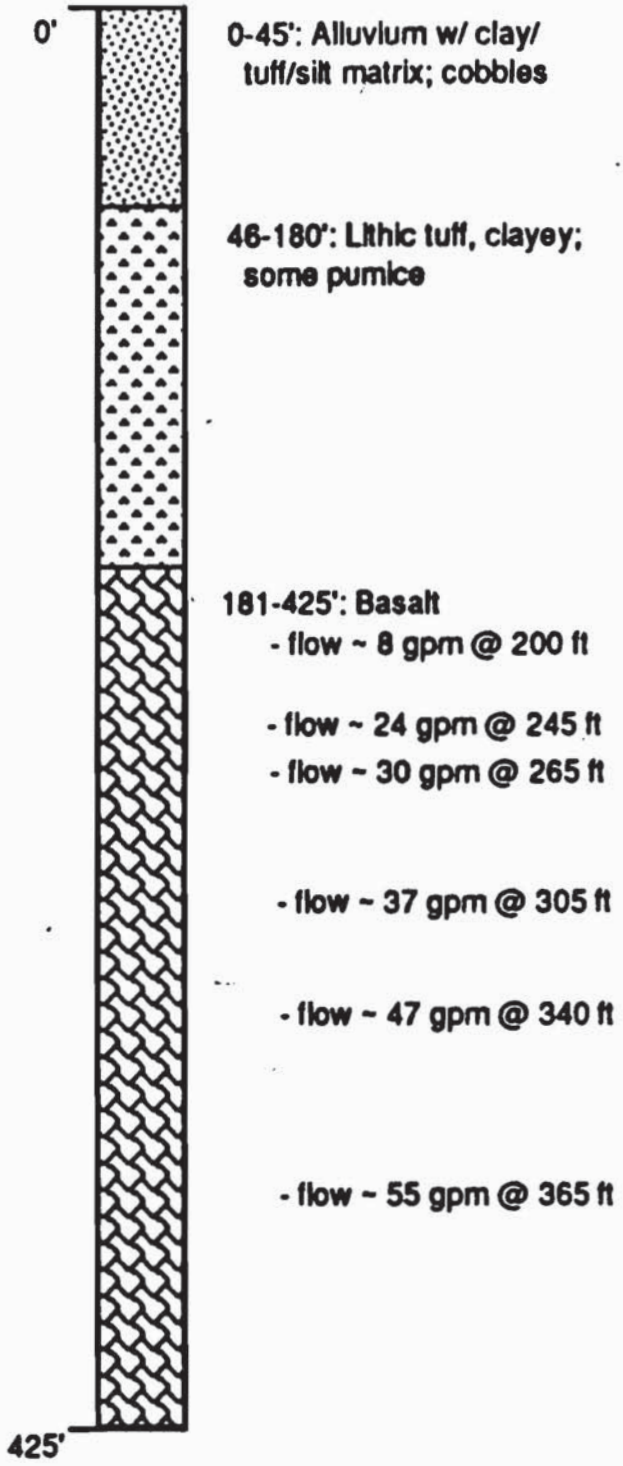
DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

MALH 54072

L-109360

89-2 / MALH 54072



89-2

SPF 17

TELECOPIER 7010 ; 2-22-91 1:53PM ; 2083455897;#

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT

Bishop Well / MALH 54046

STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. #13
State Permit No.

(1) OWNER:

Name John Bishop
Address Vale, Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Stock
Threaded ☐ Welded ☒

12 Diam. from 1 ft. to 150 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No.
Type of perforator used Torch
Size of perforations in. by in.
18' perforations from 135 ft. to 145 ft.
perforations from ft. to ft.
perforations from ft. to ft.

SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Drive shoe used ☒ Yes ☐ No Plugs Size: location ft.
Any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:

(10) LOCATION OF WELL:

County Malheur Driller's well number
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found ft.
Static level 95 ft. below land surface. Date 6/15/6
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 12"
Depth drilled 482 ft. Depth of completed well 432 ft.

Formation: Describe color, texture, grain size and structure of materials and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Yellow Clay	0	15	
Fine Sand & Gravel	15	22	
Yellow Clay & Boulders	22	57	
Cemented Sand	57	75	
Cemented Sand & Gravel	75	106	
Coarse Gravel	106	112	water
Yellow Clay & Sm. Boulders	112	129	
Soft Sandstone	129	138	
Coarse Gravel	138	142	
Fine Sandstone	142	170	
Hard Gray Stonestone	170	238	
Soft Gray Sandstone	238	450	
Soft Sandy Blue Shale	450	462	
Fine Sand	462	481	
Soapsyone	481	482	
Wild Sand in Bottom			

Work started 5/7/63 19 Completed 6/19/63 19
Date well drilling machine moved off of well 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] (Drilling Machine Operator) Date 19
Drilling Machine Operator's License No.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name HYSELLS DRILLING
(Person, firm or corporation) (Type or print)
Address
[Signed] (Water Well Contractor)

SPF 9-1

BLM Well / MALH 2277

BLM WELL

Copy of Well Log

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the TE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

APPROX ELEV. 3590

State Well No. _____

State Permit No. _____

CRYSTAL RIDGE WELL JOB # 4702

(1) OWNER: Bureau of Land Management
Name Box 700 , Vale Oregon
Address

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☒ Abandon ☐
If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other Stock

(5) CASING INSTALLED: Threaded ☐ Welded ☒
6 " Diam. from 0 ft. to 147 ft. Gage .280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☐ Yes ☒ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☒ Yes ☐ No
Manufacturer's Name VOP Johnson
Type Stainless Steel Model No.
Diam. 6 Slot size 10 Set from 159 ft. to 166 ft.
Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.
Static level ft. below land surface Date
Artesian pressure lbs. per square inch Date

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Bailer test 12 gal./min. with NO ft. drawdown after 4 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(10) CONSTRUCTION:
Was a seal—Material used One Sack Cement
Depth of seal 18 ft.
Diameter of well bore to bottom of seal 8 in. Below Seal
Were any loose strata cemented off? ☐ Yes ☐ No Depth
Was drive shoe used? ☐ Yes ☒ No
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(11) LOCATION OF WELL:
County Malheur Driller's well number
NE ¼ NW ¼ Section 8 T. 22 R. 44 W.M.
Bearing and distance from section or subdivision corner

Depth at which water was first found

(12) WELL LOG: Diameter of well below casing
Depth drilled 175 ft. Depth of completed well 175 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Yellow Clay	0	60	
Blue Clay	60	75	
Brown Clay	75	95	
Blue Clay	95	105	
Brown Clay	105	170	
White Sand	170	175	154
ORIGINAL 1972			
STATIC LEVEL	126'		
PUMP LEVEL	147'		
5 2 1/2 PIPE			
2 1/2 CYLINDER			
STATIC LEVEL AS OF	8/3/88		
x 150'			

Work started 8-15 1972 Completed 8-16 1972
Date well drilling machine moved off of well 8-16 1972

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) /S/ Winfield Page Date 1972
(Drilling Machine Operator)
Drilling Machine Operator's License No. 65

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Page Brothers Drilling
(Person, firm or corporation) (Type or print)
Address Rt. 2 Box 371 , Vale Oregon
/S/ Winfield Page

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
AUG 23 1972
STATE ENGINEER
SALEM OREGON

NC

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

Malh 2277

State Well No. 22S/44E-8 66

State Permit No.

BLM Well / MALH 2277

(1) OWNER:
Name Bureau of Land Management
Address BX 700 - Vale, Ore.
Owyhee Ridge Well

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☑ Reconditioning ☑ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☑ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other Stock ☑

(5) CASING INSTALLED:
Threaded ☐ Welded ☑
6" Diam. from 0 ft. to 147 ft. Gage .280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes ☑ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☑ Yes ☐ No
Manufacturer's Name U.O.P. Johnson
Type Stainless steel Model No.
Diam. 6 Slot size 10 Set from 159 ft. to 166 ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 12 gal./min. with NO ft. drawdown after 4 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 14 ft.
Diameter of well bore to bottom of seal 8 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 1 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☑ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Malheur Driller's well number
NW ¼ NW ¼ Section 8 T. 22 R. 44E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 165 ft.
Static level 154 ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6
Depth drilled 175 ft. Depth of completed well 175 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Yellow Clay	0	60	
Blue Clay	60	75	
Brown Clay	75	95	
Blue Clay	95	105	
Brown Clay	105	170	
White Sand	170	175	154

Work started 8-15 1972 Completed 8-16 1972
Date well drilling machine moved off of well 8-16 1972

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Winfield Page (Drilling Machine Operator) Date , 1972
Drilling Machine Operator's License No. #165

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name PAGE Bros. Drilling (Person, firm or corporation) (Type or print)
Address Rt. 2 BX 371 - Vale, Ore.
[Signed] Winfield Page (Water Well Contractor)
Contractor's License No. 564 Date 8/22, 1972

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

MALH 54404

GMW17-31 / MALH 54404

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125168

START CARD # 1035606

(1) LAND OWNER

Owner Well I.D. GMW-17-31

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

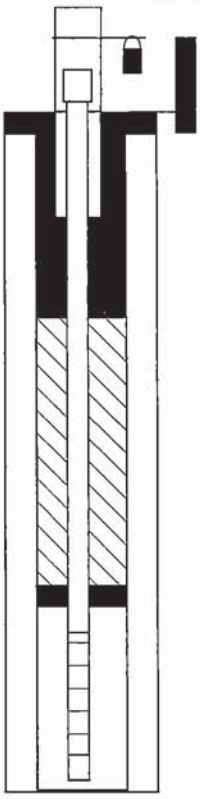
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 498.00 ft. Special Standard ☐



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 98

CASING
Dia. 12 From ☒ 3 To 98
Gauge .250 Wld Thrd
Material ◉ Steel ○ Plastic ☒ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ○ Steel ○ Plastic ☐ ☐

SEAL
From 0 To 38
Material Bentonite Chips
Amount 36 Sacks Grout weight _____

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 458 To 498
Slot Size 0.020

FILTER
From 453 To 455 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

○ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

RECEIVED BY OWRD

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer SPF Water Engineering

DEC 21 2017

Water quality concerns? ☐ Yes (describe below)

SALEM, OR

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 100
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67387000 DMS or DD
Long ° ' " or -117.35963000 DMS or DD
○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well			

Flowing Artesian? ☐ Dry Hole? ☒

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(8) WELL LOG

Ground Elevation 3711.00

Material	From	To
soft brown clay-top soil	0	3
brown decomposed sand & gravel	3	8
soft light brown sandstone	8	17
hard green sandstone	17	22
med. hard green sandstone	22	28
hard green sandstone	28	41
soft orange sandstone	41	47
soft red sandstone	47	55
sticky red clay	55	60
soft red clay some white clay strips	60	82
hard dark red strips of claystone	82	107
soft red & white clay	107	122
soft tan & red clay	122	142
med. hard red claystone	142	147
hard grey sandstone	147	157
med. hard orange, tan & red claystone	157	177
hard red yellow claystone	177	197
soft red clay	197	202
broken black basalt	202	212

Date Started 8/1/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically)
Signed TONY HACKETT (E-filed) Tony Hackett

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically)
Signed SAM P KINGREY (E-filed) Sam Kingrey
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MALH 54404

GMW17-31 / MALH 54404

MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L 125168

START CARD # 1035606

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
10	98	520

FILTER PACK

From	To	Material	Size
455	499	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	453	200	S	14.1
Cement	38	98	41	S	15.6
Cement	499	520	9	S	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	5	☒	2	458	sch80	○	●		☒

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
med. hard multicolored sandstone	212	217
soft yellow orange grey clay	217	242
hard layers sandstone grey	242	258
soft tan clay	258	269
strips of grey clay & grey sandstone	269	309
hard brown glassy rock	309	319
soft tan & grey clay	319	336
hard brown glassy rock	336	337
soft tan clay	337	342
hard fractured brown rock	342	351
hard layers brown sandstone w/clay strip	351	385
hard brown rock	385	397
hard int. lyrs sndstne/clay in 1' strips	397	446
brown clay	446	454
hard brown sandstone	454	456
soft brown clay	456	459
hard layers brown sandstone	459	465
brown clay	465	481
hard sandstone brown	481	498
sticky brown clay	498	520

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SALEM, OR

Comments/Remarks

additional drillers 1)Jake Kingrey
2)David Dutcher

MALH 54405

STATE OF OREGON
MONITORING WELL REPORT GMW17-32 / MALH 54405
(as required by ORS 537.765 & OAR 690-240-0395)

WELL I.D. LABEL# L 125169

START CARD # 1036039

(1) LAND OWNER

Owner Well I.D. GMW-17-32

First Name _____ Last Name _____

Company CALICO RESOURCES USA CORP.

Address P O BOX Q

City VALE State OR Zip 97918

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

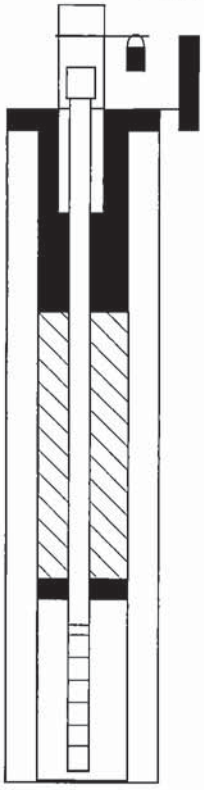
(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 718.00 ft. Special Standard ☒



MONUMENT/VAULT Above Ground

From _____ To _____

BORE HOLE

Diameter 16 From 0 To 118

CASING

Dia. 12 From ☒ 2.5 To 118

Gauge .250 Wld Thrd

Material ◉ Steel ○ Plastic ☒ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ○ Steel ○ Plastic ☐ ☐

SEAL

From 0 To 118

Material Cement

Amount 66 Sacks Grout weight 15.6

SCREEN

Casing/Liner Casing Material PVC

Diameter 5 From 678 To 718

Slot Size 0.020

FILTER

From 668 To 670 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

◉ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
2		720	1
0.5	50	715	6

Temperature 60 °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer SPF Water Engineer

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

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(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM

Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101

Tax Map Number _____ Lot _____

Lat ° ' " or 43.67240000 DMS or DD

Long ° ' " or -117.36157000 DMS or DD

○ Street address of well ◉ Nearest address

REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/6/2017		665

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES

Depth water was first found 244.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
9/10/2017	244	355	20		244
10/1/2017	665	720	2		665

(8) WELL LOG

Ground Elevation _____

Material	From	To
soft brown sandy dirt	0	5
soft clay white & green	5	25
hard green sandstone	25	37
soft clay red yellow orange	37	62
hard layers sandstone red & white	62	101
hard fractured sandstone	101	141
hard red & white mudstone	141	148
hard red & white sandstone	148	159
soft clay red tan yellow	159	202
med. hard red yellow sandstone	202	238
hard fractured blk rock w/clay strips	238	266
soft brown & white clay	266	280
hard black rock	280	291
soft white clay	291	306
blk fractured rock w/clay strips	306	336
brwn glassy rock frctrd w/brn cly lyrs	336	355
int, layers clay & brown rock	355	397
hard layers sandstone brown	397	476
hard grey sandstone	476	531

Date Started 8/29/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017

Password : (if filing electronically)

Signed TONY HACKETT (E-filed) Tony Hackett

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017

Password : (if filing electronically)

Signed SAM P KINGREY (E-filed) Sam P Kingrey

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

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MONITORING WELL REPORT - WELL I.D. LABEL# L 125169

continuation page GMW17-32 / MALH 54405 START CARD # 1036039

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	1004

FILTER PACK

From	To	Material	Size
670	719	SILICA SAND	10/20

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Cement	0	460	376	S	15.6
C5	287	668	65	S	14.1
Cement	460	680	9	yds	15.6

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		5	X	2	678	sch80		●		X
●		8	X	1	655	.250	●		X	

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(8) WELL LOG

Material	From	To
soft white grey clay	531	568
fractured black rock w/clay strips	568	628
fractured brown rock	628	641
brown rock	641	653
hard black rock	653	663
1' strips sandstone & clay brown	663	719
soft clay tan white & grey	719	764
brown hard sandstone	764	795
soft brown clay	795	819
hard black rock	819	847
soft grey clay	847	861
sandstone layers brown red	861	911
soft grey clay	911	929
hard grey clay	929	932
med. hard white clay	932	945
hard claystone	945	952
soft white clay	952	967
grey claystone	967	975
soft white clay	975	985
hard grey claystone	985	1004

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SALEM, OR

Comments/Remarks

see attached special standards request for seal, sand filter and bottom hole completion, see also diagram of well in special standards. Additional drillers
1) Jake Kingrey
2) David Dutcher

MALH 54406

STATE OF OREGON
MONITORING WELL REPORT GMW17-33 / MALH 54406 **WELL I.D. LABEL# L** 125170
(as required by ORS 537.765 & OAR 690-240-0395) **START CARD #** 1036990

(1) LAND OWNER

Owner Well I.D. GMW-17-33
First Name _____ Last Name _____
Company CALICO RESOURCES USA CORP
Address P O BO Q
City VALE State OR Zip 97918

(2) TYPE OF WORK

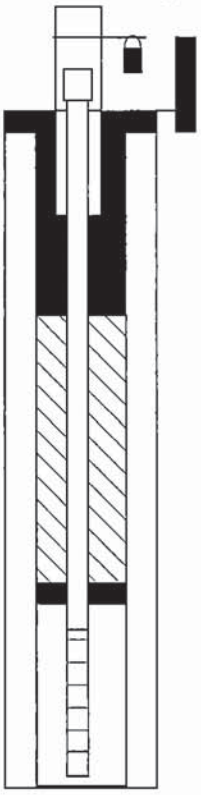
[X] New [ ] Deepening [ ] Conversion
[ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Hollow Stem Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) CONSTRUCTION

Piezometer Well [ ]
Depth of Completed Well 340.00 ft. Special Standard [ ]



MONUMENT/VAULT Above Ground
From _____ To _____

BORE HOLE
Diameter 16 From 0 To 118

CASING
Dia. 12 From [X] 3 To 118
Gauge .250 Wld Thrd
Material (•) Steel ( ) Plastic [X] [ ]

LINER
Dia. _____ From [ ] _____ To _____
Gauge _____ Wld Thrd
Material ( ) Steel ( ) Plastic [ ] [ ]

SEAL
From 0 To 118
Material Cement
Amount 69 Sacks Grout weight 15.6

SCREEN
Casing/Liner Casing Material PVC
Diameter 5 From 238 To 338
Slot Size 0.020

FILTER
From 233 To 235 Material SAND SEAL Size of pack 20/40

(5) WELL TESTS

(•) Pump ( ) Bailer ( ) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		340	1
40	28	335	2

Temperature 60 °F Lab analysis [ ] Yes
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Supervising Geologist/Engineer SPF Engineering
Water quality concerns? [ ] Yes (describe below)
DEC 21 2017

From	To	Description	Amount	Units

SALEM, OR

(6) LOCATION OF WELL (legal description)

County MALHEUR Twp 22.00 S N/S Range 44.00 E E/W WM
Sec 8 SE 1/4 of the NW 1/4 Tax Lot 101
Tax Map Number _____ Lot _____
Lat ° ' " or 43.67235700 DMS or DD
Long ° ' " or -117.36162400 DMS or DD
(•) Street address of well ( ) Nearest address
REFER TO GPS

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+ SWL(ft)
Existing Well / Predeepening			
Completed Well	11/28/2017		243

Flowing Artesian? [ ] Dry Hole? [ ]
WATER BEARING ZONES Depth water was first found 251.00

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
11/28/2017	243	338	20		243

(8) WELL LOG

Ground Elevation _____

Material	From	To
brown clay boulders	0	16
brown clay & rock fragments	16	23
redish sandstone, clay strips	23	30
green claystone	30	35
green & red sandstone	35	46
tan & red claystone	46	73
white,yellow & red clay	73	92
tan claystone	92	98
tan clay layers with rock	98	110
bown & red sandstone	110	120
red, white & brown very hard clay	120	172
red clay with brown strips soft	172	185
red clay, bounces on rock	185	200
brown sandstone	200	212
brown clay strips, sandstone	212	220
brown clay	220	225
brown & grey clay	225	230
brown sandstone	230	245
brown clay	245	251

Date Started 11/2/2017 Completed 11/30/2017

(unbonded) Monitor Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 12/14/2017
Password : (if filing electronically)
Signed TONY HACKETT (E-filed)

(bonded) Monitor Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 12/14/2017
Password : (if filing electronically)
Signed SAM P KINGREY (E-filed)
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

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MONITORING WELL REPORT -
continuation page

WELL I.D. LABEL# L125170

GMW17-33 / MALH 54406

START CARD # 1036990

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	118	365

FILTER PACK

From	To	Material	Size
235	339	SILICA SAND	8/12

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
C5	0	233	132	S	14.1

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		5	X	2	238	sch80		●		X

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Material	From	To
fractured black rock	251	290
grey clay	290	295
black, brown fractured rock	295	314
grey clay strips with black rock	314	320
grey clay	320	327
black, grey rock fractured	327	338
brown clay	338	365

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SALEM, OR

Comments/Remarks

Jake Kingrey

David Dutcher

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

GMW17-34 / MALH 54437

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name Last Name
Company CALICO RESOURCES USA CORP.
Address PO BOX Q
City VALE State OR Zip 97918

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [ ] Community
[X] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 890 ft.

BORE HOLE

Dia	From	To
16	0	200
14	200	355
12	355	790
10	790	950

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	8	8	S
		Calculated		
Bentonite Chips	8	199	141	S
		Calculated		

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[X] Other Bent. tagged from
Backfill placed from 892 ft. to 950 ft. Material bent chips
Filter pack from 828 ft. to 892 ft. Material sand Size 8/12
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	12	X	3	55	.250	◉	○	X	
◉	○	12		55	355	.375	◉	○	X	
◉	○	10	X	2	790	.250	◉	○	X	
◉	○	5	X	3	830	40	◉	○	X	
○	○						○	○		

Shoe [X] Inside [ ] Outside [ ] Other Location of shoe(s) 355
Temp casing [ ] Yes Dia From + To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type v-wire slotted Material SS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/pipe size
Screen	Casing	5	830	890	.03			5

(8) WELL TESTS: Minimum testing time is 1 hour

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County MALHEUR Twp 22 S N/S Range 44 E E/W WM
Sec 8 NW 1/4 of the SE 1/4 Tax Lot 101
Tax Map Number Lot
Lat ° ' " or 43.669 DMS or DD
Long ° ' " or -117.3584 DMS or DD
( ) Street address of well (•) Nearest address
GRASSY MTN. REFER TO GPS

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	06-17-2018			

Flowing Artesian? [ ] Dry Hole? [X]

WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Ground Elevation

Material	From	To
loose brown clay with rocks	0	3
brown hard clay	3	6
red, black sandstone crumbly	6	14
red, black boulders rough	14	18
brown clay soft	18	22
brown clay red black boulders	22	34
black red brown boulders	34	76
light brown clay	76	112
brown tan clay some boulders	112	140
dark brown clay some boulders	140	200
brown clay	200	204
crumbly brown rock with clay	204	225
yellow clay with some grey rock	225	235
yellow clay	235	245
brown clay, brown & green rock	245	265
light brown clay	265	277
brown, red grey color rock	277	287
brown clay	287	292
brown red green rock	292	305

Date Started 4-17-18 Completed 6-21-18

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1896 Date 7/11/18
Signed Tony Hackett

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1899 Date 7-12-18
Signed Thomas Kenyon
Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT
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WATER SUPPLY WELL REPORT - continuation page

GMW17-34 / MALH 54437

WELL I.D. LABEL# L	130031
START CARD #	1038395
ORIGINAL LOG #	

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

Water Quality Concerns

From	To	Description	Amount	Units

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To

SEAL Material	From	To	Amt	sacks/lbs
Cement	199	200	70	S
		Calculated		
Cement	200	355	27	S
		Calculated		
Cement	0	790	124	S
		Calculated		
Cement	0	826	296	S
		Calculated		

FILTER PACK

From	To	Material	Size
826	828	SILICA SAND	16/30

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(11) WELL LOG

Material	From	To
brown red & white rock	305	320
grey rock with some grey clay	320	325
multicolored sandstone	325	330
green clay with rock	330	345
fractured rock lost circulation	345	360
fractured rock red black tan	360	371
tan clay smooth	371	372
fractured rock rough drilling, red	372	383
grey clay smooth	383	387
grey color bouncing rough sandstone	387	394
grey clay smooth	394	397
red tan sandstone fractured	397	402
yellow soft clay	402	405
tan brown clay	405	410
green rock very hard	410	420
fractured sandstone, lost circulation	420	423
yellow clay	423	430
sandstone fractured tan colored	430	438
grey clay	438	439
hard sandstone	439	441
binding bouncing fractured sandstone	441	446
yellow clay smooth	446	480
tan clay smooth	480	496
hard sandstone red brown	496	497
grey clay smooth	497	499
fractured sandstone red brown	499	500
red clay smooth	500	538
fractured sandstone red brown	538	542
brown clay smooth	542	576

(7) PERFORATIONS/SCREENS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Comments/Remarks

12" UNDERREAMER SHOE @ 790

10" UNDERREAMER SHOE @ 355

WATER SUPPLY WELL REPORT - continuation page

GMW17-34 / MALH 54437

WELL I.D. LABEL# L 130031
START CARD # 1038395
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		
							S
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

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Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

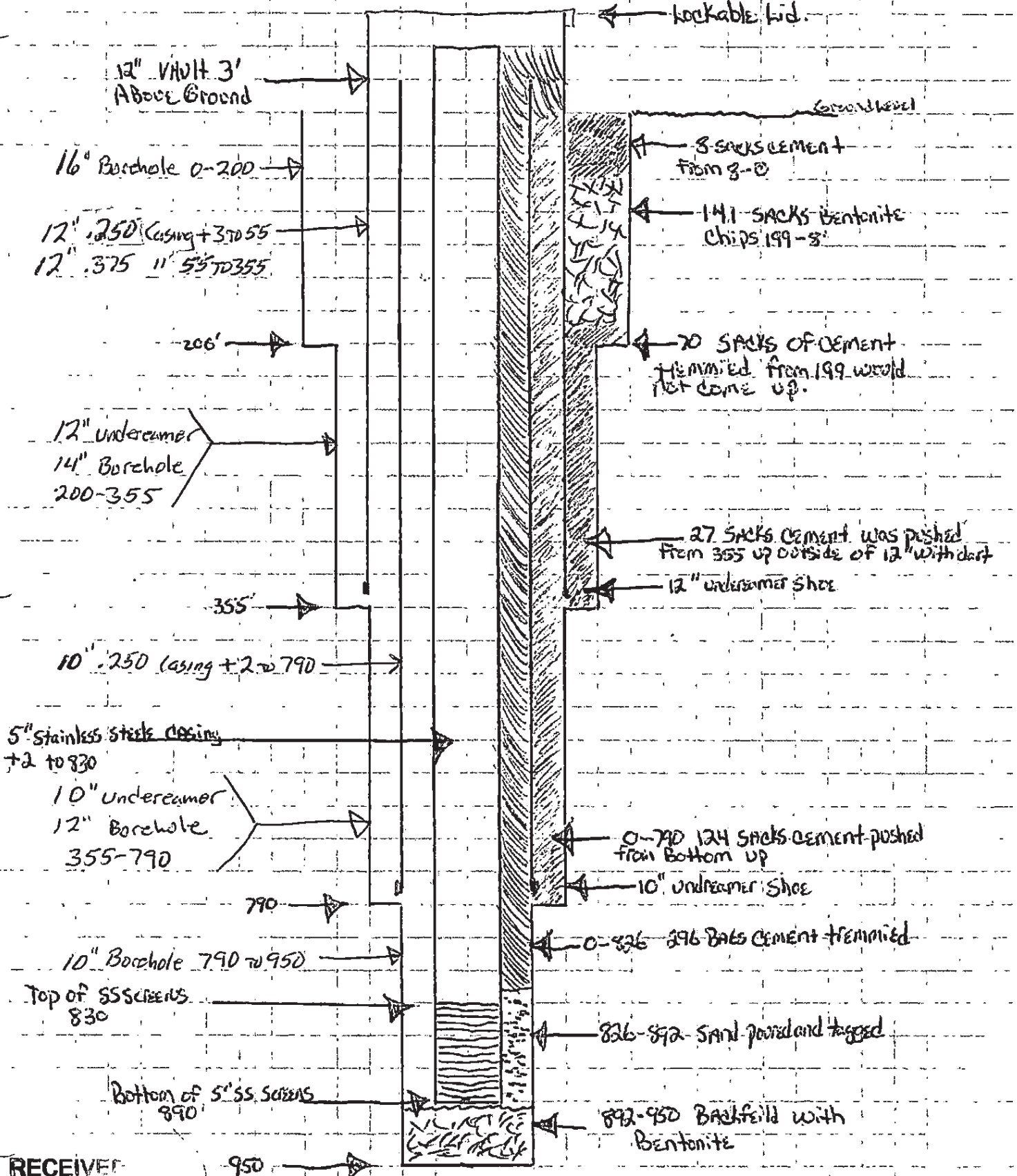
(11) WELL LOG

Material	From	To
fractured sandstone brown grey	576	585
red clay smooth	585	612
fractured grey sandstone	612	623
fractured red brown grey sandstone	623	647
fractured brown grey sandstone	647	671
grey sandstone, red black chips	671	675
grey brown white black siltstone	675	680
brown white fractured sandstone	680	690
brown red sandstone	690	695
brown sandstone	695	700
light brown yellow sandstone	700	705
brown red white black sandstone	705	710
brown sandstone	710	720
tan colored sandstone	720	730
tan colored sandstone	730	740
grey white red brown sandstone	740	762
white grey red sandstone	762	775
grey rusty red sandstone	775	800
grey red brown sandstone	800	890
brown clay & yellow	890	910
white, black, tough	910	950

Comments/Remarks

GMW17-34

GMW17-34 / MALH 54437



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JUL 16 2018

OWRD

GW-1 / MALH 2281

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Malh 2281

RECEIVED

FEB 16 1989

22S/44E/17CC

(START CARD) # 9258

(1) OWNER:

Well Number: 47-1 NAT

Name Atlas Precious Metals

Address 2025 Century Way

City Boise, State Id Zip 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☒ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 155.5 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12 1/4	160	122	Colo. Sand	160	122	9 sacks
12 1/4	122	115	Enviro Plug	122	115	2 sacks
12 1/4	115	+1	cement grout	115	+1	432 sacks

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material see above

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12 sand

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	12"	+2	8	250	☒	☐	☐	☐
					☐	☐	☐	☐
	4	+2	155.5	sch80	☐	☒	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on plug

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
135.5	155.5	.020		4"		☒	☐
135.5	+2			4" PVC		☒	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
	NA		1 hr.
60		160	

Temperature of water NA Depth Artesian Flow Found 140

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ Longitude ____

Township 22S N or S, Range 44E E or W, WM.

Section 17 NW ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) NA

(10) STATIC WATER LEVEL:

49 ft. below land surface. Date 1/21/89

Artesian pressure na lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 140- 160

From	To	Estimated Flow Rate	SWL
140	160	60	49

(12) WELL LOG:

Ground elevation 3698

Material	From	To	SWL
Brown Clay	0	35	0
Brown clay w/gravely sand	35	56	0
Blue Clay	56	122	0
Blue Clay & Gravel	122	140	?
Gravel	140	160	49

Date started 12/14/89 Completed 1/18/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 1202

Signed Robert W. Doty Date 2-13-89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 2-15-89

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GW-2 / MALH 2279

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Malh 2279

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FEB 16 1989

WATER RESOURCES DEPT

22S/44E-8ac

(START CARD) # 9257

(1) OWNER:

Well Number: 47-2

Name Atlas Precoius Metals

Address 2025 Century Way

City Boise, State Id. Zip 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☒ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 325 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
			Sand	400	173	34
12 1/4	0	120	Enviro Plug	173	167	4
7 7/8	120	400	cement grout	167	+1	150

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from 400 ft. to 173 ft. Material colorado silica

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+2	10	250	☒	☐	☐	☐
					☐	☐	☐	☐
	4	+1.75	325	Sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on cap

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens X Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	290	.020		4"		☒	☐
290	+1.75	Blank		4"		☒	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
NO WATER			

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' ____ " Longitude ____ ' ____ "

Township 22 S N or S, Range 44 E E or W, WM.

Section 8 SW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) NA

(10) STATIC WATER LEVEL:

DRY ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found NONE

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation 3755

Material	From	To	SWL
Brown Clay	0	20	-
Brown Clay Blue Clay	20	100	-
brown/yellow	100	110	-
gray/brown	110	120	-
Blue/Gray	120	400	-

Date started 1/17/89 Completed 1/23/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 1202

Signed Robert W. Doty Date 2/13/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William C. Doty Date 2/13/89

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STATE OF OREGON

WATER WELL REPORT
(as required by ORS 537.765)

GW-3 / MALH 2278

RECEIVED FEB 16 1989

Malh 2278

22S/44E/8bd

(START CARD) # 9259

(1) OWNER:

Well Number: 47-3ATER

Name: Atlas Precious Metals

Address: 2025 Century Way

City: Boise, State: Id Zip: 83709

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other Monitoring

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 350 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12¼	0	400	Sand	400	200	32
			Enviro plug	200	198	2
			cement	198	+1	59

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from 400 ft. to 200 ft. Material colorado sand

Gravel placed from ____ ft. to ____ ft. Size of gravel 8-12

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	4"	+1.5	320	sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
	6	62	10	.250	☒	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) no shoe screw on plug

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☒ Screens Type Aardvark Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	350	.020	-	4"		☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
****NO WATER*****			

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' ____ " Longitude ____ ' ____ "

Township 22 S N or S, Range 44 E E or W, WM.

Section 8 SE ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) na

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found DRY

From	To	Estimated Flow Rate	SWL
	****DRY*****		

(12) WELL LOG:

Ground elevation 3720

Material	From	To	SWL
Brown Clay	0	20	-
Brown Blue clay	20	60	-
Blue clay	60	120	-
Blue and gray clay	120	400	--

Date started 1/26/89 Completed 2/1/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Robert W. Doty WWC Number 1202

Date 2/13/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 2/13/89

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9809C 3/88

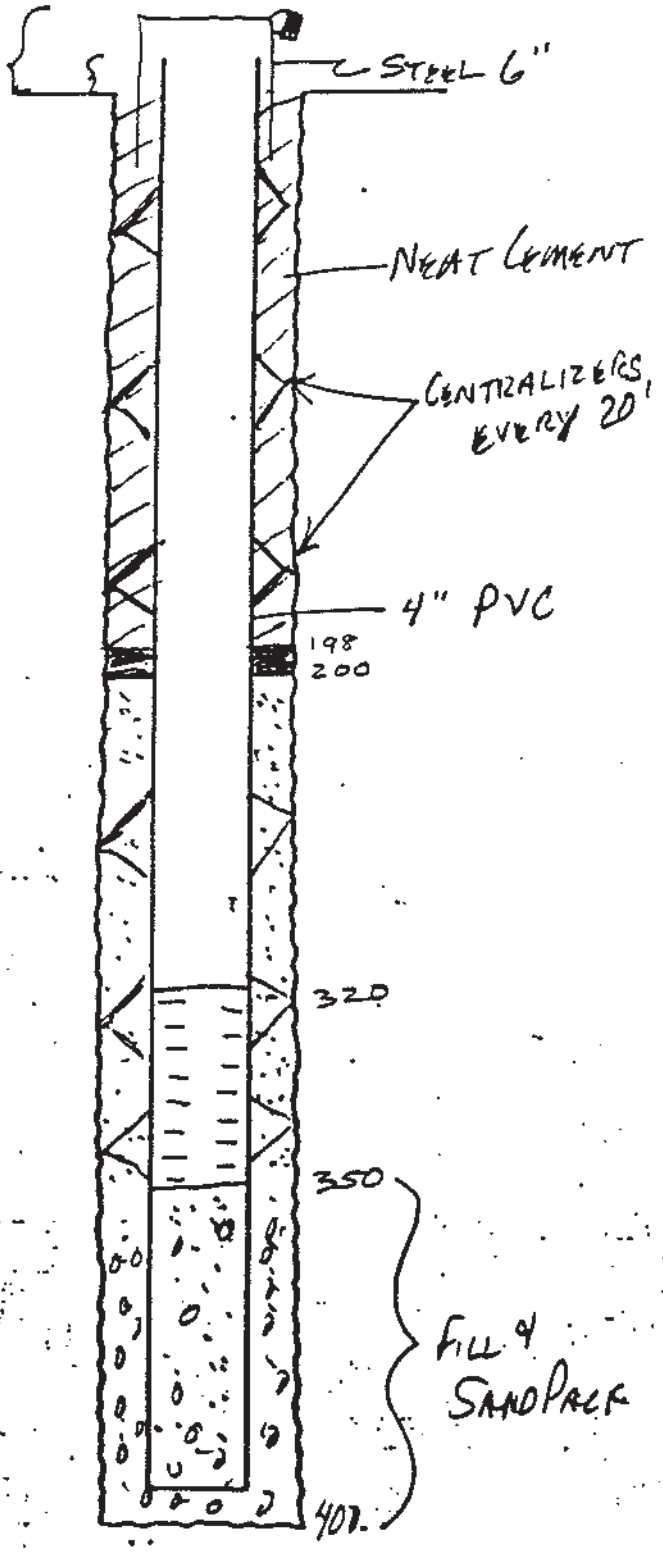
PIEZOMETER COMPLETION DIAGRAM

GW-3 / MALH 2278

DATE COMPLETED: 1-24-89 to 1-31-89
WEATHER: Cold, Hazy/Clear

PROJECT NAME/LOCATION: Atlas Grassy Mountain – Vale, Oregon
PROJECT # 219-8T-008
WELL LOCATION: Twn 26-20 & 26-21
PIEZOMETER NUMBER: (47-3) GW-3

PERMIT # _____
PROPERTY OWNER: BLM / Atlas
GEOLOGIST: K. Beiser / None
DRILLER: Duty Drilling / Dave Knarr & Bob D.
RIG TYPE & MODEL: Speedstar 15THH Air Rotary
AQUIFER: Bedrock – Grassy Mtn Fm?



COMPLETION SUMMARY

Total Well Depth 350
Stickup _____
Screen Type .020" PVC Sch 80 4" ID Flush Threaded
Screen 320 to 350
Top Seal:
Neat Cement from 0 to 198
Coarse Bentonite from 198 to 200
Gravel Pack from 200 to 400
Gravel Pack Material 8-12 Colo Silica
Bottom Seal:
None from _____ to _____
_____ from _____ to _____
Well Casing Diameter 6" steel + 4" PVC to 320
Well Casing Depth 6" steel to _____
Bit Diameter 12"
Drilled Depth 400'
Centralizers Every 20'
Protective Casing Yes – 6" steel
Logged – Y _____ N X
Type – SP ____ Res ____ Gamma ____
CAL ____ Por ____ Neutron ____
Remarks: Drilled to 400 ft w/ no measurable groundwater. Caving hole allowed PVC & sand pack to 350'. Washed down sand pack and poured 2 foot seal and trymmied neat cement. Boring past 250' & well installed unsupervised by Duty Drilling Co.

#4

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH 2579

GW-3A / MALH 2579

225/44E/8 bbb

(START CARD) # 24686

(1) OWNER:

Well Number: GW-3A

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH SUITE 3150

City DENVER State Colo Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☑ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 420 ft.

Explosives used Yes ☐ No ☐ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6"	0	420	SAND	380	420	20
			BENTONITE	380	0	40

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	0	420		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☑ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.010				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude ____ Longitude ____

Township 22.5 ☐ N or S. Range 44E ☐ E or W. WM.

Section 8 SE ¼ NW ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation ____

Material	From	To	SWL
ENCLOSED			

RECEIVED

APR - 1 1991

WATER RESOURCES DEPT.
SALEM, OREGON

Date started 11/12/90 Completed 11/17/90

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number ____

Signed ____ Date ____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed ____ Date ____

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PROPERTY GRASSY MTN
Logged by BILL STRIWD
UTM #

STATE OREGON
COUNTY MALHEUR

HOLE # GW-3A
DDH
RCH
CRH 6"

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 420
BEARING
ANGLE -90°

LOCATION

PG 1 OF 2

GRAPHIC: ALT | LITH

DRILLING NOTES					BOX#	FEET	COLOR	LITHOLOGY											STRUC.			ALTERATION				MINERALIZATION				VEINING			COMMENTS
TIME	RUN	CORE	%REC	NOTES				Qal	Slt	Sa	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	Cly	Bx	Vn	Cly	Vo	Arg	Sil	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Sil	Sul	
9:00				11/12/90		5	gry-brn																											OVERBURDEN SILTY SOIL well oxidized tuffaceous silts
9:30							or																											Fluffy clayey silt
							or																											bimodal grain size
10:15						25	ochre-gry																											angular silt grains
							ochre yel																											~60% cly 40% silt
							flesh pk																											clayey silt, prob tuffaceous
							or-brn-tn																											
11:00							tan																											mostly cly minor silt
						50	or																											
							or																											damp
							or-brn																											damp
							yel-brn																											reduced dry
12:00							yel-brn																											oxidized damp
						75	gray																											" dry
							tan-brn																											reduced
							tan-brn																											
							tan-gy																											some 5% silicic clast less fluffy
							gy																											clayey silts again
1:00						100	gy																											
							gy																											
							gy																											
							gy																											
						125	gy																											
2:00							lite gy																											~50% lithic clasts 20% silt
2:15				drill down 11/14/90			gy																											
							gy																											
						150	gy																											70% silt 30% cly
10:30	Tripped for	tri cone		11/15/90			gy-brn																											70% cly 30% silt
				N.S.			brn-gy																											NO SAMP damp clay
				N.S.																														clay 75% silt 25%
11:30	inject H2O						gy																											INJECT WATER N.S. all cly
						175																												N.S. cly
							gy																											70% cly py
12:30							gy																											85% cly py
							gy																											90% cly 15 silt 50% lithics
							gy																											
						200	gy																											
							gy																											
							gy																											OXID. fxs zone silicic silt ++
							gy-tan																											OXS fxs silicic silt +
1:30							gy-tan																											
						225	gy																											
							gy																											
							gy																											
							gy																											
						250	tan																											mod srt. silicic arkose ++
							tan																											ark +
							"																											gypsum ark + +
3:00							"																											ark silt ark silt v
							"																											ark silt
						275	rd-brn-tn																											silt ark + +
							tan																											ark +
							tan																											ark + +
							"																											ark +
4:00						300	"																											mixed ark silts cly +
							"																											+
2:30	injector pump failed EOS 4:30						tan+gy																											pyritic siltstone mix cly
	11-17-90						tan+gy																											pyritic clys +
3:30						325	lt gy																											carbonaceous blk slts + gy clys
							lt gy																											mostly silts minor cly
							gy &																											
							gy &																											
							gy or																											
							blk, gy																											
						350	blk, gy																											

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NOV - 1 1991
WATER RESOURCES DEPT.
SALEM, OREGON

GW-3A / MALH 2579

PROPERTY GRASSY MTN
Logged by STROND
UTM #

STATE OR
COUNTY MALHUER

HOLE # DDH / RCH GW-3A / CRH

NORTHING
EASTING
ELEVATION

TOTAL DEPTH
BEARING
ANGLE

LOCATION

PG 2 OF 2

DRILLING NOTES					BOX# FEET	COLOR	LITHOLOGY												STRUC.				ALTERATION				MINERALIZATION					VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES			Qal	Slt	Ss	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	Cly	B X	V n	C y	V o	Arg	Sil	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Sil	Sul		ALT	LITH
11:30	truck H_2O run			EOS	360	gy																													gy cly w/ minor slts		
9:00				11-18-90		gy br																													carbon mix, slts, ARK, CLY		
						bk, TN, GY																													reduced cly, slts, ARK, carb.		
				NO H_2O		"																													POSSIBLE PRODUCING ZONE ??		
						"																													SILTS, TUFF ARK, CLAY		
						"																															
						"																															
						"																															
10:30					400	"																													mostly cly, some carb. silts, ARK		
						gy, bk																													more siltst., cly		
						gy, bk, TN																													mostly hard cly		
						gy bk																													plastic reduced cly		
11:30				NO H_2O		dk gy																															

RECEIVED
APR 1 1991
WATER RESOURCES DEPT.
SALEM, OREGON

GW-3A / MALH 2579

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH # 2576

GW-3B / MALH 2576

225/44E/8 bc

(START CARD) # W24685

(1) OWNER:

Well Number: GW-3B

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH ST. SUITE 3150

City DENVER State COLO Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 340 ft.

Explosives used Yes ☐ No ☑ Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6"	0	340	SAND	340	300	20
			BENT.	300	SURFACE	30

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	340	0		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☑ Screens Type 1010 Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
340	320	.010		2"		☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude _____ Longitude _____

Township 22S N or S. Range 44E E or W. WM.

Section 8 SW ¼ NW ¼

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) NONE

(10) STATIC WATER LEVEL:

0 ft. below land surface. Date _____

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started 12/16/90 (WJ) Completed 12/18/90 (WJ)

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed _____ Date _____

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

PROPERTY GRASSY MTN
Logged by WBS/
UTM #

STATE OREGON
COUNTY MACHUER

HOLE # DDH / RCH / CRH GW-3B

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 340
BEARING
ANGLE 90°

LOCATION

PG 1 OF

DRILLING NOTES

TIME	RUN	CORE	%REC	NOTES	BOX# FEET	COLOR	COMMENTS
2:00	12-16-90			[illegible]	5	tan	overburden
				drill		tan	
						tan-brn	silty clay
9:00	12-17-90			dry		brn	
					25	"	
						"	
						light tan	sandy, silty, clay minor
						or-rd	
						"	sand increasing
10:00					50	red	sand str oxidized red
						"	"
						"	"
						"	mix cly sand silt
						red-brn	
					75	brn	silty clay loam
11:00						yel-brn	"
						"	"
						brick	sand mostly well oxidized
						brick rd	" "
					100	ochre	ochre yellow clay
						ochre	" " "
						dk brn	clay
						brn	silty clay
12:00						lt brn	Minor sand + silt, mostly cly
					125	lt brn	" "
						med brn	clay
						" "	
						gy-brn	
1:00	harder formation?					"	
					150	"	
2:00			moist			gy	weakly damp
3:00			moist			gy	
						gy	
						gy	
					175	gy	powdery
4:00						gy	"
						dk brn	"
[illegible]	EOS					gy-brn	"
4:30	EOS					" "	"
9:00	12-18-90 (CLS)			drill	200	gy	rean hole - becoming sticky
				with		gy	some soft blk carbonaceous, mostly
				water		gy-blk	some sand - large grains pink, white
						gy	
						gy	
					225	gy	minor white tuff. sand
						gy	
						gy	
						gy-bk	minor blk sltst
						brn-gy	sltst and clay
					250	brn-gy	
				blow hole		gy brn	mostly clay some white tuff sand
						gy brn	
						gy brn	
						gy brn	
					275	gy	Fairy dense gy sltst
				kh white		gy	mostly clay some wht sltst
						gy	mostly wht sltst or tuff
						gy white	"
						wht gy	
				kh white	300	gy	Sand, carbonaceous, clear to milky
						gy	[illegible] sltst and grains
						gy	clay minor sltst
						brn	
					325	brn	
						brn	
						brn	
						brn	
						brn gy	
		EOS		12-18-90	10:00		mostly clay trace sand [illegible]
		clay @ 185'					blowing air, water + foam [illegible] of
		squeezing off + caving			350		original 3 well

LITHOLOGY: Qal, Slt, Ss, Cg, Ls, Lith, Cry, Tuf, Rhy, And, Bas, Cly
STRUC.: B X, V n, C y, V o
ALTERATION: Arg, Sil, Py, Pro
MINERALIZATION: Lim Hem, Jar, Py, Sul
VEINING: Ca, Sil, Sul
GRAPHIC: ALT, LITH

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WATER RESOURCES DEPT.
SALEM, OREGON

GW-3B / MALH 2576

MALH 54073

GW-4 / MALH 54073 WELL I.D. # L 107460

(1) LAND OWNER Well Number GW-4
Name Calico Resources
Address
City State Zip

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	370	Bentonite Grout	0	272	
			Bentonite Pellets	272	275	

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	0	360	Protective	☒	☐	☐	☐
	4"	0	360	sch. 40	☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
280	350	0.020"				☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.70112 Longitude -117.36541
Township 21S N or S Range 44E E or W. WM.
Section 32 SE 1/4 NW 1/4
Tax Lot ____ Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
77.61 ft. below land surface. Date 6-7-2012
Artesian pressure ____ lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL
50	55	1-2 gpm	
295	306	75 gpm	
340	345	100 gpm	

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
See attached lithologic and well construction logs.			

Date started ____ Completed 11/30/1989

SOURCE OF DATA/INFO Baseline data reports for Grassy Mtn. mine site. Reports are housed in OWRD Groundwater Section library

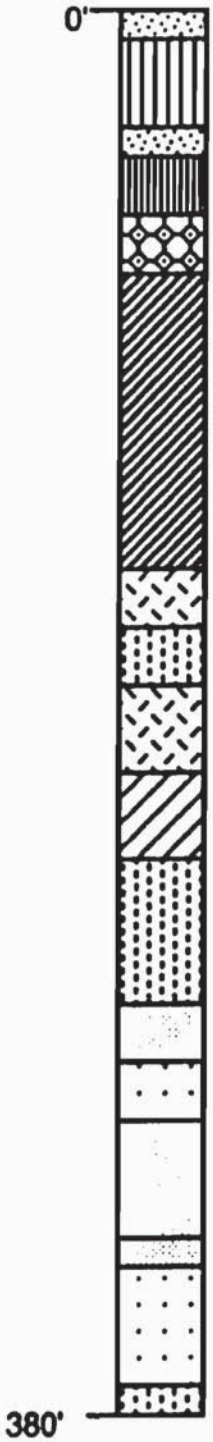
COMPILED BY: Josh Hackett, OWRD Groundwater Section

DATE: 10/9/2013

WELL INFORMATION REPORT 11/16/2000

L- 107460

GW-4 / MALH 54073



0-5': Alluvium

6-25': Brown clay w/sandstone

26-30': Alluvium

31-45': Clay w/silt

46-55' Chert-pebble - conglomerate w/ clay and sandstone (1-2 gpm @ 50')

56-150': Blue-grey clay

151-160': Sandstone; tuff

161-175': Clay w/ sandstone, conglomerate, and silt

176-195': Sandstone; tuff

196-225': Silt and sandstone

226-280': Clay w/ sandstone and conglomerate

281-305': Sandstone and conglomerate (75 gpm @ 295')

306-325': Conglomerate and sandstone w/ clay

326-340': Sandstone w/ clay and conglomerate (100 gpm @ 340')

341-345': Sandstone

346-370': Conglomerate w/ sandstone

371-380': Clay w/ sandstone

GW-4

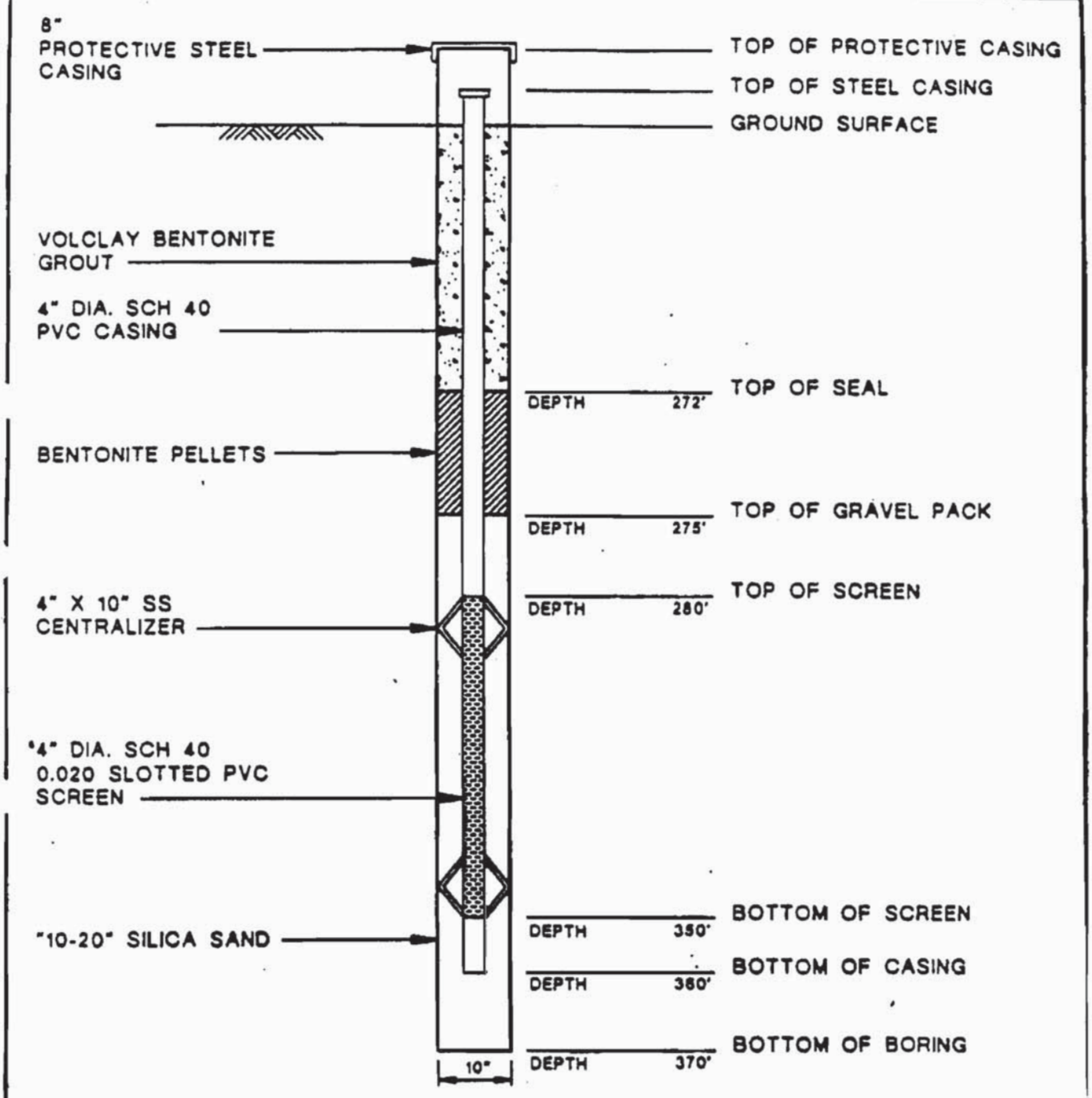
GW-4 / MALH 54073 MALH 54073

L-107460

STEFFEN ROBERTSON & KIRSTEN (U.S.)
Consulting Engineers & Scientists

CLIENT ATLAS PRECIOUS METALS
PROJECT GRASSY MTN.
PROJECT NO. 24101
DATE 11/89

WELL NO. GW-4-GM
BY E. DILLE



NOTES:
1. NOT DRAWN TO SCALE

MALH 54194

GW-5 / MALH 54194

WELL I.D. # L

(1) LAND OWNER Well Number GW-5
Name Calico Resources
Address P.O. Box Q
City Vale State OR Zip 97918

(2) TYPE OF WORK
☑ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other Unknown

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☑ Other Observation

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 265 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
204	224					☑	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Malheur Latitude 43.68348 Longitude -117.37418
Township 22 ☐N ☑S Range 43 ☐E ☐W WM.
Section 1 NW 1/4 SE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation 3411

Material	From	To	SWL

Date started Completed

SOURCE OF DATA/INFO
Information in files

COMPILED BY: Marc Norton

DATE: 2/5/2015

WELL INFORMATION REPORT 11/16/2000

GW-5 / MALH 54194

PROPERTY Wood
Logged by GW-5
UTM #

STATE Oregon
COUNTY Malheur

HOLE # DDH
RCH GW-5
CRH

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 260'
BEARING
ANGLE

LOCATION

PG 1
OF 1

DRILLING NOTES					BOX#	FEET	COLOR	LITHOLOGY											STRUC.	ALTERATION				MINERALIZATION				VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES				Qal	Slt	Ss	Cg	Ls	Lith	Cry	Tuf	Rhy	And	Bas	B/V/C/V x/n/y/o	Arg	Sil	Py	Pro	Lim/Hem	Jar	Py	Sul	Ca	Sil	Sul		ALT	LITH
						5																								clean tuff w/wk Fe-oxides fresh tuff w/ fresh biotite " " w/rhyolite clasts " " some fe-oxides		
						25																								euhedral biotite wk fe-oxides		
						50																								fresh looking tuff few clasts		
						75																										
						100																								a few clasts of volcanics		
						125																								grey fragments w/fine pyrite fresh biotite " "		
						150																								a few frags w/pyrite fresh pyrite " " " "		
						175																										
						200																										
						225																								some coarse pyrite ; qtz		
					MISSING																												
						250																								strong argillization		
						260																								strong silicification		

#9

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MALH 25 7B

GW-6 MALH 2578

25/43E/12 ad

(START CARD) # 24683 (VS)

(1) OWNER:

Well Number: GW-6

Name ATLAS PRECIOUS METALS

Address REPUBLIC PLAZA 370 17TH ST. 3150

City DENVER State COLO Zip 80202

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other MONITORING

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 340 ft.

Explosives used Yes ☐ No ☐ Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
6	0	340	SAND	300	340	20
			BENTONITE	300	0	40

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	2"	0	340		☐	☑	☐	☑
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
300	340	.010				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Malh (VS) Latitude _____ Longitude _____

Township 22S N or S. Range 43E E or W. WM.

Section 12 SE ¼ NE ¼

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:

47 ft. below land surface. Date _____

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL

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APR - 1 1991

WATER RESOURCES DEPT.
SALEM, OREGON

Enclosed

Date started 11/27/90 (VS) Completed 12/1/90 (VS)

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 10054

Signed _____ Date _____

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

PROPERTY GRASSY MTN
Logged by WBS
UTM #

STATE OREGON
COUNTY MALHEUR

HOLE # DDH
RCH
CRH GW-6

NORTHING
EASTING
ELEVATION

TOTAL DEPTH 340
BEARING
ANGLE -90°

LOCATION

PG 1
OF 1

DRILLING NOTES							LITHOLOGY														STRUC.	ALTERATION				MINERALIZATION				VEINING			COMMENTS	GRAPHIC	
TIME	RUN	CORE	%REC	NOTES	BOX #	FEET	COLOR	Qal	Slt	Sd	Tuff	Ls	Clh	Cry	Lgt	Rhy	And	Bas	Clay	BVx	CVnly	Arg	Slt	Py	Pro	Lim Hem	Jar	Py	Sul	Ca	Slt	Sul		ALT	LITH
3:30	drill	dry	dusty	11-27-90	5		tan tan tan																											
4:30				EOS 11:30-90																															
10:30					25																													
11:00				slough dr. hole																															
12:00			very damp		50																													
1:00			moist (not wet)		75																													
2:00					100																													
3:00					125																													
4:00			dust	EOS-																														
10:00				STUCK 11/30/90	150																														
	drill	dry																																
12:00			damp		175																													
12:30	drill	wet		inject H_2O																														
1:00				drilling fast	200		dk gy-grn																													
1:30					225																													
2:30					250																													
3:30				engine problems	275																													
4:30					300		lt gy																											
5:30			EOS	12-1-90																														
10:00	engine over heats			(down time)	325																													
				T.D.	340																													

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WATER RESOURCES DEPT.
SALEM, OREGON

SCREEN 300-340

NONE

NONE

100 ft (200'-305') water column in morning

formation H_2O collected overnight - water level @ 117' hole TD @ 140' not making H_2O to detect while drilling
CHECKED RECOVERY 2ll 11/29-97/2

zlt, sand, tuff (rhyolitic cobbles common) no significant alteration
grains are generally angular
mix: poorly consolidated clay + silt + sand, clay frags
heterolithic colluvium/alluvium of Miocene age ?? or Holocene ??
Qal and/or col sands ?
No more coasts, into tuffaceous bedrock, clays although as weakly consolidated as Qal above
tuffaceous clay + tuffite
STUCK IN HOLE/CAVING freed 5:30/11/29 checked water levels
N.S.
N.S.
N.S.
N.S.
N.S.
sample composite 145-165
Cogl. mixed w sd, slt, clay or heterolithic Tuff.
mostly congl. + clay minor silicic alteration
minor H_2O prod. on blowing hole
& lite gray sandstone in above mix
clay component decreasing (~2 gpm) blown hole making ~5-8 gpm with injected 2 gpm
Sandstone increasing
still making ~5-8 gpm - 2 gpm inject
water production decrease → 3-4 gpm

GW-6 MALH 2578

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

RECEIVED
JAN 4 1989
WATER RESOURCES DEPT.
SALEM, OREGON

MALH 2275

22S/44E/5BB

(START CARD) # 9256

(1) OWNER:

Well Number: MW-6

Name Atlas Precious Metals Inc.

Address 743 Horizon Court Suite 202

City Grand Junction State Colorado Zip 81506

(2) TYPE OF WORK: Prod-1 / MALH 2275

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 425 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14¾	0	18	Bent. Cement	18'	0'	25 SACKS
			Mixed 4# Bent & Cement (Portland)			
			to 100# to 5.5 gal of water			

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from 425 ft. to 100 ft. Size of gravel Col. Silica #8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	99	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	6"	~~425~~			☐	☐	☐	☐
		+2	425	Sch 80	☐	☒	☐	☒

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method 1120 Type I Astm 1785

☒ Screen Type ____ Material PVC Sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
40	255	.020		6"		☐	☒
325	355	.020		6"		☐	☒
380	420	.020		6"		☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
150		405	1 hr.
60	40	Set at 120	3 hr.

Pump

Temperature of water ____ Depth Artesian Flow Found See II

Was a water analysis done? No ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☒ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: 145-255, 325-355,

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ Longitude ____

Township 22S N or S, Range 44E E or W, WM.

Section 5 NW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

0 ft. below land surface. Date 12-17-88

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 145-255

From	To	Estimated Flow Rate	SWL
145	255	20 gpm	40
325	355	60 gpm	40
380	420	150 gpm	40

(12) WELL LOG:

Ground elevation 3520

Material	From	To	SWL
Overburden w/ Boulders	0	17	0
Clay (Brown)	17	140	0
Sand Stone w/ Blue Clay	140	255	40
Blue Clay	255	320	40
Sand Stone w/ Blue Clay	320	355	40
Blue Clay	355	380	40
Frac. (Hard) Sand Stone	380	415	40
Blue Clay	415	425	40
After setting 1 week			
water will come up			
to gr. level			
Between 6"&10" from			
100' to Mx. Level Annular Space			
is filled with Volcay Bent. pellets			

Date started 12/5/88 Completed 12/19/88

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 620

Signed Robert W. Doty Date 12/28/88

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 325

Signed Robert W. Doty for William E. Doty Date 12/28/88

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9

WATER WELL REPORT
STATE OF OREGON

MALH 2275

RECEIVED
DEC 19 1988
WATER RESOURCES DEPT.
SALEM OREGON

State Well No. 22S/44E/5ab

State Permit No. 9256

Prod-1 / MALH 2275, 2511

PLEASE TYPE or PRINT IN INK

(1) OWNER:
Name Atlas Precious Metal, Inc.
Address
City State

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☒
Threaded ☒ Welded ☒
10 " Diam. from +2 ft. to 99 ft. Gauge .250
6 " Diam. from +2 ft. to 245 ft. Gauge Sch. 80

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☐ Yes ☐ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No
Manufacturer's Name Aardvark
Type P.V.C. Sch. 80 Model No.
Diam. 6" Slot Size .020 Set from 380 ft. to 420 ft.
Diam. 325-355 Slot Size Set from 145 ft. to 255 ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Air test 150 gal./min. with drill stem at 420 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☐
Well seal—Material used Bent. & Cement Grout
Well sealed from land surface to 18 ft.
Diameter of well bore to bottom of seal 12 1/4 in.
Diameter of well bore below seal 9 7/8 in.
Number of sacks of cement used in well seal 10 sacks
How was cement grout placed? Pressure Grout
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☒ Yes ☐ No Size of gravel: No. 8
Gravel placed from 100 ft. to 245 ft.

(10) LOCATION OF WELL:
County Molhuer Driller's well number 9256
NW ¼ NE ¼ Section 5 T. 22S R. 44E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing
Depth drilled ft. Depth of completed well ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Overburden w/ Boulders	0	17	0
Clay Brown	17	140	0
Sandstone w/ Blue Clay	140	255	40
Blue Clay	255	320	40
Sandstone w/ Blue Clay	320	355	40
Blue Clay	355	380	40
Fruited Hard Sandstone	380	415	40
Blue Clay	415	425	40

Work started 12-5 19 88 Completed 12-10 19 88
Date well drilling machine moved off of well 12-11 19 88

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Date 12-15, 1988

Bonded Water Well Constructor Certification:
Bond BD7900518665 (number) Issued by: Allied Surety Company Name
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Bill Doty Drilling Co., Inc. (Type or print)
Address 25497 Freeze Out Rd. Caldwell, ID 83605
[Signed] Water Well Constructor
Date 12-14, 1988

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*45292-690

RECEIVED

MAY 1 1989

WATER RESOURCES DEPT.

SALEM, OREGON

MALH 2511

22S/44E/5ab

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

Prod-1 / MALH 2275, 2511

(START CARD) # 9256

(1) OWNER:

Well Number:

Name Atlas Precious Metals

Address 743 Horizin Ct. Suite 202

City Grand Junction State Co Zip 81506

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☒ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☒ Other Auger

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well ____ ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12"	0	18				
10	18	425				
			Cement grout	0	26	19

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material [redacted]. & Cement Grout

Gravel placed from 100 ft. to 245 ft. Size of gravel NO. 8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	99	.250	☒	☐	☒	☐
	6"	+2	245	Sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☒ Screens Type AARDVARK Material PVC Sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.020		6"		☐	☐
145	255	325-355				☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100	40'	300	1 hr.

Temperature of water ____ Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ____ ' " Longitude ____ ' "

Township 22S N or S, Range 44E E or W, WM.

Section 5 NW ¼ NE ¼

Tax Lot ____ Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) ____

(10) STATIC WATER LEVEL:

40' ft. below land surface. Date 12-8-88

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 40'

From	To	Estimated Flow Rate	SWL
140-~~255~~	255	30 gpm	
320	355	50 gpm	
380	415	150 gpm	

(12) WELL LOG:

Ground elevation ____

Material	From	To	SWL
Overburden w/ boulders	0	17	0
Clay brown	17	140	0
Sandstone w/ blue clay	140	255	40
blue clay	255	320	40
Sandstone w/ blue clay	320	355	40
Blue clay	355	380	40
Fruited hard sandstone	380	415	40
Blue clay	415	425	40
=			
12-5-88 - 12-10-88			
+==========			
Redone surface seal to 26 feet using method 2 referring to letter sent January 9, 1989			
Drilled around 10" casing to the depth of 26' using method C pumped 19 sacks of cement down hole			
3-30-89 - 3-31-89			
==========			
Incorporated to singel log per state request			

Date started 12-5-88 Completed 3-31-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Bob Doty WWC Number 1202 Date 4-15-89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed Bob Doty for Bill Doty WWC Number 325 [redacted] Date 4/15/89

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PW-1 / MALH 2276

JAN 02 1990

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

WATER RESOURCES DEPT
SALEM, OREGON

malh 2276

22s/44E/8ad

(START CARD) # W-14816

(1) OWNER:

Well Number:

Name Atlas Precious Metals Inc

Address 318 A St.

City Vale State OR Zip 97818

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☑ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☑ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☑ No Depth of Completed Well 420 ft.

Explosives used ☐ Yes ☑ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14 3/4	0	28	PT Cement	0	28	19
			VOLCLAY	300	SURFACE	40 Sacks
			BENT PELLETS	295	300	3 BUCKETS

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other Tremie

Backfill placed from ft. to ft. Material

Gravel placed from 555 ft. to 295 ft. Size of gravel .030

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+2	320	.250	☑	☐	☑	☐
	6"	340	400	"	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☑ Screens Type WIRE WOUND Material LOW CARBON

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
320	340	.030			6"	☐	☑
400	420	.030			6"	☐	☑
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
35		294	1 hr.

Temperature of water 64° F Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Malheur Latitude ' " Longitude ' "

Township 22S N or S, Range 44E E or W, WM.

Section 8 SE ¼ NE ¼

Tax Lot Lot Block Subdivision

Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:

52 ft. below land surface. Date 12-6-89

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found

From	To	Estimated Flow Rate	SWL
320	340	20	
400	420	20	
		40	

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
SOIL	0	2	
CLAY	2	10	
BASALT	10	28	
BROWN CLAY	28	55	
SILTSTONE	55	130	
CLAY & GRAVEL	130	173	
CLAY & SAND	173	190	
BASALT	190	315	
BROWN CLAY	315	323	
BROWN CLAY & SAND	323	360	
BROWN SANDSTONE	360	395	
BLACK & RED SAND	395	408	
SANDSTONE COARSE	408	441	
CLAY & GRAVEL	441	447	
CLAY & SAND	447	555	

Date started 11/27/89 Completed 12-1-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 544

Signed Larry Bird Date 12/1/89

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PW-4 / MALH 2206

JAN 02 1990

WATER RESOURCES DEPT.
SALEM, OREGON

Malh 2206

21S/44E/32bd
W-14815

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # ~~W-14811~~

(1) OWNER:

Well Number: PW-4

Name: ATLAS PRECIOUS METALS
Address: 318 A STREET WEST
City: VALE State: OR Zip: 97918

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☒ No ☐ Depth of Completed Well 375 ft.

Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14 3/4	0	40	PORTLAND CEMENT	0	40	19
9 7/8	40	375	VOLCLAY	5	275	40
			CEMENT	0	5	

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other

Backfill placed from 375 ft. to 370 ft. Material 10-20 MESH
Gravel placed from 370 ft. to 275 ft. Size of gravel 10-20 MESH

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	0	40	.250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	6 5/8"	0	280	.250	☐	☐	☐	☐
	6 5/8"	300	340	.250	☒	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method
☒ Screens Type WIRE WOUND Material Low Carbon Steel

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
280	300	.030		6"		☐	☒
340	360	.030		6"		☐	☒
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100		350	1 hr.

Temperature of water 62°F Depth Artesian Flow Found —

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☒ Odor ☐ Colored ☐ Other

Depth of strata: 280 STILL USABLE

(9) LOCATION OF WELL by legal description:

County MALHEUR Latitude Longitude
Township 21S N or S, Range 44E E or W, WM.
Section 32 SE ¼ NW ¼
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:

81 ft. below land surface. Date 11/17/89
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 280'

From	To	Estimated Flow Rate	SWL
280	360	100 gpm	81

(12) WELL LOG:

Ground elevation ≅ 3350

Material	From	To	SWL
Alluvium	0	25'	
Clay	25	150'	
Sandy clay	150	175	
Sandstone	175	215	
Clay	215	275	
Sandstone	275	305	
Clay	305	325	
Sandstone and Conglomerate	325	365	
Clay.	365	375	

Date started 11/16/89 Completed 11/20/89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed [signature] John L Rugg Date 11/20/89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 544
Signed Larry Burd Date 11-20-89

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Table C3. Vibrating Wire Piezometer Completions

Well	Level	Easting (Oregon State Plane South, ft)	Northing (Oregon State Plane South, ft)	Surface Elevation (square pedistal)	Azimuth	Inclination	Bore Length From Surface	Vertical Distance from Surface (feet from datum)	Sensor Elevation (feet amsl)	Most Recent Pressure (PSI, 9/26/18 for all except 17-30 = 9/21/18)	Most Recent Wate Level Elevation (feet, 9/26/18 for all except 17-30 = 9/21/18)
GM17-16	TOP	5,752,272.77	745,783.80	3,896.75	352.00	-65.00					
GM17-16	SHALLOW	5,752,234.86	745,990.42				500.00	453.15	3,443.59	-4.170	
GM17-16	INTERMEDIATE	5,752,206.52	746,144.89				870.00	788.49	3,108.26	27.289	3,171.30
GM17-16	DEEP	5,752,204.17	746,157.69				900.00	815.68	3,081.07	39.212	3,171.65
GM17-20	TOP	5,752,500.97	745,969.25	3,837.87	350.00	-80.00					
GM17-20	SHALLOW	5,752,487.66	746,029.82				358.00	352.56	3,485.30	-1.954	
GM17-20	INTERMEDIATE	5,752,472.41	746,099.19				769.00	757.32	3,080.55	28.612	3,146.64
GM17-20	DEEP	5,752,470.05	746,109.93				829.00	816.41	3,021.46	52.689	3,143.17
GM17-21	TOP	5,752,306.98	746,206.48	3,811.83	154.00	-70.00					
GM17-21	SHALLOW	5,752,388.33	746,056.01				499.00	468.91	3,342.92	-2.872	
GM17-21	INTERMEDIATE	5,752,429.24	745,980.33				750.00	704.77	3,107.06	0.545	3,108.32
GM17-21	DEEP	5,752,437.33	745,965.37				801.00	752.69	3,059.14	-0.984	
GM17-28	TOP	5,751,976.26	746,149.50	3,828.63	152.00	-52.00					
GM17-28	SHALLOW	5,752,122.54	745,900.14				469.00	369.58	3,459.05	-2.868	
GM17-28	INTERMEDIATE	5,752,210.10	745,750.87				750.00	591.01	3,237.62	-0.162	
GM17-28	DEEP	5,752,235.41	745,707.73				831.00	654.84	3,173.79	-0.158	
GM17-30	TOP	5,752,354.31	745,904.93	3,856.68	320.00	-77.00					
GM17-30	SHALLOW	5,752,276.07	745,990.62				517.00	503.75	3,352.93	-0.195	
GM17-30	INTERMEDIATE	5,752,239.65	746,030.51				758.00	738.57	3,118.11	23.033	3,171.31
GM17-30	DEEP	5,752,234.93	746,035.68				789.00	768.78	3,087.90	-6.104	

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-10	GM17-28	shallow - 470 intermediate - 750 deep - 830	shallow - 392 intermediate - 112 deep - 31	862	6	Y	40		--	--	--		see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-10		GM17-28	1	-					
			2	-					
				-					
				-					
				-					
TOTALs									

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER			
1	1ST WATER =	**1 BATCH =**	30 GAL
2	2ND CEMENT =		1 BAG (94 lb)
3	3RD BENTONITE =		1/2 BAG (25 lb)

6" hole - 1.5 gal/ft
4" hole - 0.65 gal/ft

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-14	5/11/17	GM17-16	1	-	10; 100'	60	2	1	fluid; v. liquid
	5/11/17		2	-	20; 200'	120	4	2	
	5/11/17		3	-	-	120	4	2	
	5/11/17		4	-	-	120	4	2	
	5/11/17		5	-	-	120	4	2	
TOTALs						540	18	9	

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-14	GM17-16	shallow - 497 intermediate - 868 deep - 899	shallow - 423 intermediate - 52 deep - 21	920	8	N	--	cleaned, competent	1,000	--	--	923	see grouting form		

Borehole Grouting Field Form



MIX ORDER

1 1ST WATER =
2 2ND CEMENT =
3 3RD BENTONITE =

1 BATCH = 30 GAL
1 BAG (94 lb)
1/2 BAG (25 lb)

6" hole - 1.5 gal/ft
4" hole - 0.65 gal/ft

Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
7-30	6-9-17	P17-17	1	120	2-10'	240	8	4	Very Thick
-30	6-9-17	P17-17	2	? 0	20-10'	240	8	4	Very Thick

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-18	GM17-21	shallow - 499 intermediate - 750 deep - 801	shallow - 333 intermediate - 82 deep - 31	832	6	Y	Bottom 200'	cleaned, competent	--	--	--		see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-18	5/23/17	GM17-21	1	-					Major notes thicker consistency
			2	-					
				-					
				-					
				-					
TOTALs									

Paramount Gold
Grassy Mountain
VWP Borehole Installation Field Form

Drill Hole ID	Site ID	VWP Installation Depths (ft bgs)	VWP Installation (feet from bottom of hole)	Driller Observations					Supply/Equipment Inventory - Initial Counts			As-Installed - Counts			
				Total Depth, along angled hole (ft)	Measurement Reference (ft above ground level)	Water Observations		Hole Status (able to clean, mud/fluid filled, competent, etc)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	PVC pipe (SCH 80)	AMC Gel Bentonite (50 lb bags)	Quikrete Portland Cement Type I/II (92.6 lb bags)	Water (Gallons)
						Encountered (Y/N)	Est. Depth (ft)								
P17-20	GM17-20	shallow - 358 intermediate - 768 deep - 829	shallow - 497 intermediate - 87 deep - 26	855	6	Y	--	cleaned, competent	--	--	--	850 ft	see grouting form		

Paramount Gold
Grassy Mountain
Borehole Grouting Field Form

MIX ORDER				
1	1ST WATER =	**1 BATCH =**	30 GAL	6" hole - 1.5 gal/ft
2	2ND CEMENT =		1 BAG (94 lb)	4" hole - 0.65 gal/ft
3	3RD BENTONITE =		1/2 BAG (25 lb)	

Drill Hole ID	Date/Time	Site ID	Batch #	Expected height (ft)	# Rods Pulled	Gallons Water	Cement # Bags	Bentonite # Bags	Consistency
P17-20	5/9/2017 17:40	GM17-20	1	100	11; (110 ft)	60	2	1.5	
	5/9/2017 19:45		2	--	--	240	8	4	
			3	--	--	150	5	2.5	
TOTALs						450	15	8	

Grassy Mountain Gold Project Groundwater Vol. III, Dewatering Projections and Evaluation of Potential Pumping Impacts

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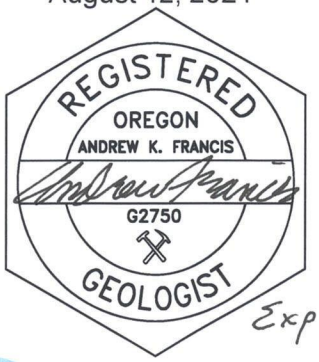
August 12, 2021



Exp 4-1-22

SPF WATER ENGINEERING

Executive Summary

Underground mine workings developed as part of the Grassy Mountain gold mine will intercept the regional water table and require dewatering. Pumping from wells outside the mine area to supply mine water demands will result in water table drawdown outside of the mine. In addition, the dewatering rate for the underground mine is an important process and water balance parameter. This report describes preliminary modeling efforts used to characterize pumping rates required for dewatering and impacts from groundwater pumping for mine water supply.

Theoretical groundwater inflow rates into the mine workings are on the order of 20 gpm to 100 gpm for sustained pumping, and up to 500 gpm for short-duration pumping, and reflect the wide span of aquifer parameters and model assumptions utilized for predictive analyses. Based on drilling observations (within the resource) and aquifer testing performed (outside the resource) to date, the higher-end range of potential inflow rates (associated with higher hydraulic conductivity) are unlikely to be encountered during mining activities and, if encountered, the associated high dewatering rates would be anticipated for relatively short durations (i.e., likely on the order of days or weeks). Due to the proposed underground mining approach, the entire groundwater table will not be intercepted at once. Rather, the exposure to groundwater is anticipated to be restricted to subsurface workings that encounter groundwater; where groundwater is present, such inflow can be managed or mitigated as the conditions arise.

The lower range of inflow rates represents longer-term predicted dewatering as steady-state conditions are approached and reflects lower overall permeability of the aquifer system over a greater area (and likely within the resource). The higher inflow rates reflect shorter-duration flow rates resulting from dewatering of larger zones with higher permeability and more water in storage that appear to be laterally discontinuous throughout the area based on borehole drilling and aquifer testing. Based on borehole drilling and well (aquifer) testing performed to date in the vicinity of the ore body, higher permeability areas are thought to more likely be encountered away from the silicified ore body (i.e., to the north of the ore deposit and in basin areas characterized by greater amounts of sediment as compared to silicified and/or competent bedrock deposits). Direct long-term testing of aquifer properties within the ore body has not been performed to date as verification, but extensive anecdotal evidence from mineral exploration drilling and the drilling on GMW18-34 supports the concept of low permeability materials within the near vicinity of the ore body.

These estimates are within the range of previous estimates prepared by ABC (1992) for an open pit mining scenario, on the order of 30 gpm to 3,000 gpm (described in Section 2.1). Variations in the estimates are attributed to aquifer property assignment, model assumptions and techniques, and time frames evaluated.

A modeling analysis to evaluate mine dewatering requirements has been prepared by Lorax Environmental Services, Ltd. (Lorax, 2021) subsequent to the one described in this report. The Lorax modeling analysis was based on refinements to the model presented herein to incorporate new information. The Lorax modeling analysis is summarized in the present report, and the results are generally consistent although Lorax predicts a narrower and somewhat lower range of potential dewatering rates.

Potential water level impacts caused by groundwater pumping for mine water supply (based on an estimated annual average demand of 320 gpm for ten years) are projected to range from approximately 0 to 12 feet of drawdown at the closest named spring (Lowe Spring) to the main production wells. The high end of impact is possible given the estimated aquifer properties if Lowe Spring is directly connected to the Grassy Mountain Formation aquifer from which the water is being produced, and assuming there are no compartmentalization affects caused by faulting. Drawdown effects are observed up to approximately 2 miles from the current highest producing well (PW-4), using a threshold of 0.5 feet of drawdown.

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Appendices

Appendix A: Supporting equations for steady state analytical dewatering estimates

Appendix B: Theis analytical drawdown estimates spreadsheets

Appendix C: MODFLOW calibration target files

Appendix D: Memory device including MODFLOW files

Appendix E: Grassy Mountain Gold and Silver Project Mine Dewatering Hydrogeologic Assessment

1. INTRODUCTION

Calico Resources USA Corp (Calico) proposes mining gold from patented and unpatented claims in the Grassy Mountain area. Developing the Grassy Mountain gold mine will require dewatering the mine and pumping groundwater to support mine operations.

. Calico seeks to dewater the active mining area in an interval between the elevations of approximately 3,500 and 3,100 feet, approximately 500 feet beneath ground surface.

Water is required to support numerous mine operations. The analyses presented in this report were based on an anticipated peak water-supply requirement is 400 gpm in the summer months and approximately 270 gpm during the remainder of the year. The annual average daily demand was projected to be about 320 gpm (0.71 cfs), or approximately 516 acre-feet per year . A map of the Proposed Grassy Mountain Mine including proposed and existing production wells and nearby springs is provide below as Figure 1.

The Feasibility Study recently issued (Ausenco, 2020) presents updated mining plans and water supply requirements. The mining plans presented in this new document are not much different from the earlier presentations on which the analyses presented herein are based, but the water supply requirements are much lower (i.e., on the order of 50 to 100 gpm annual average). Therefore, the results of this preliminary analysis should be viewed as a conservative (i.e., if the raw water demand is much higher than currently anticipated).

Calico seeks to characterize hydrogeology at the Grassy Mountain Project mine site to design dewatering and pumping systems. SPF Water Engineering, LLC (SPF), at Calico's request, has collected and compiled baseline hydrogeologic data (SPF 2021a) and developed a hydrogeologic conceptual model of the general mine area (SPF 2021b). This report describes the use of – and results from – analytical and numerical models to predict (1) dewatering requirements of the active mine-site area and (2) potential impacts of groundwater production on local groundwater levels.

Specific objectives of this modeling effort included the following:

1. Identify and use appropriate analytical methods to make a preliminary prediction of dewatering pumping rate requirements and production well pumping groundwater-level impacts.
2. Develop a numerical model to simulate groundwater flow in the vicinity of the Grassy Mountain mine site.
3. Simulate dewatering requirements and the effects of groundwater production on local springs using a range of hydraulic parameter values.
4. Conduct sensitivity simulations to help evaluate uncertainty associated with hydraulic-parameter choices.

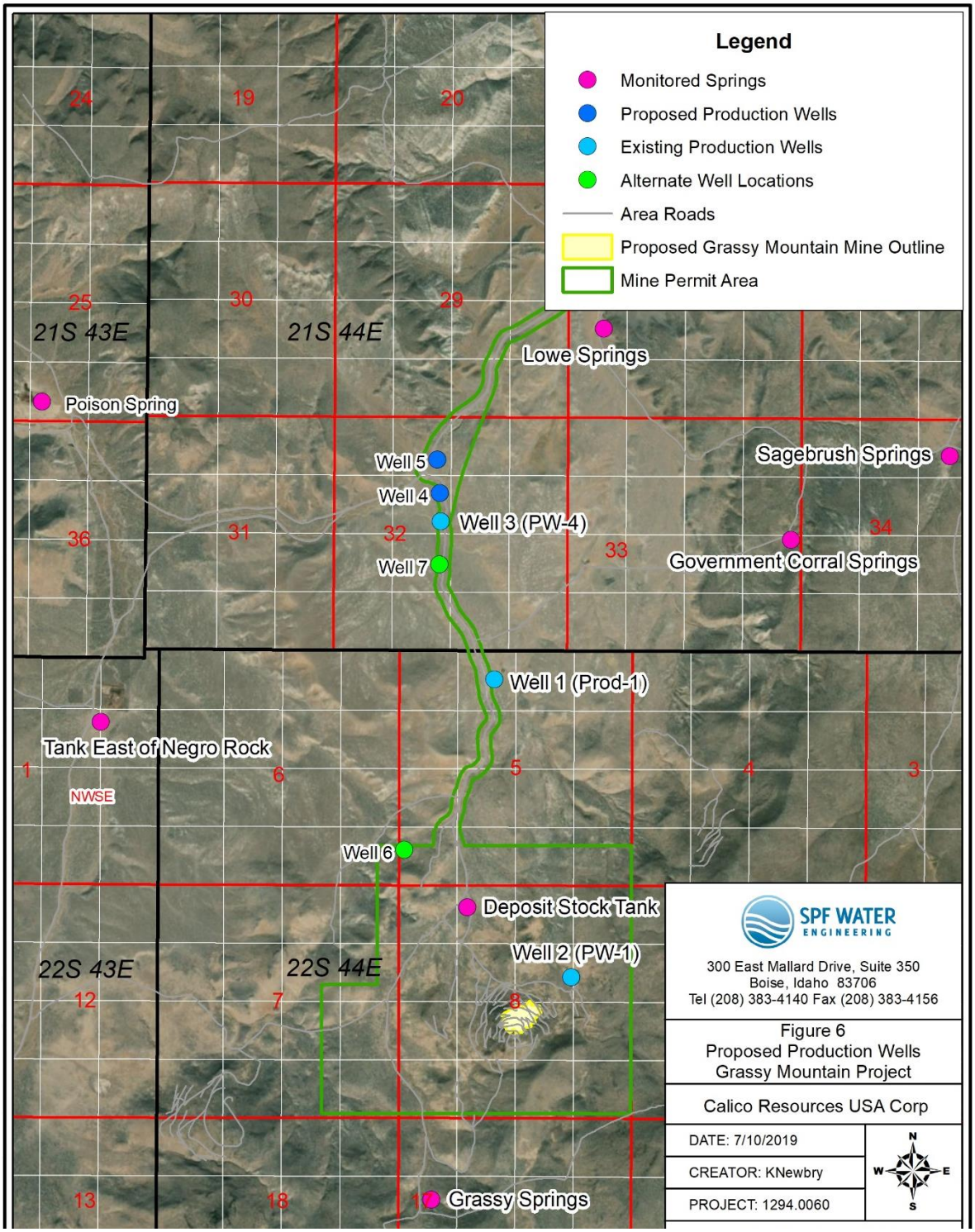

Figure 1. Proposed Grassy Mountain Mine and Production Wells

This modeling effort builds on a preceding conceptual model of groundwater flow (SPF 2021b) and supporting data sets. Other information used in developing the groundwater flow model includes the following:

- Monitoring Wells Completion Reports (SPF 2018a, SPF 2018b) – These documents present a summary of drilling, installation, and testing of three groundwater monitoring wells completed during 2017 and one additional upgradient monitoring well completed during 2018.

- Groundwater Resources Baseline Data Report (SPF 2021a) – This document presents a summary of groundwater baseline data collected since 2013, including groundwater levels, groundwater quality data from wells, spring discharge rates, and spring water quality data.

- Groundwater Characterization Report (SPF 2021b) – This document focuses on elements of the conceptual model. Specifically, the conceptual model report addresses the Technical Review Team Water Resources Subcommittee (TRT) request for a conceptual model and specific questions raised by the TRT about the conceptual model (Lynch, 2014).

- Well Field Design Report (SPF 2019) – This document provides a preliminary water supply evaluation, outlining projected water demands and proposed and existing water supply wells.

This preliminary numerical model simulating groundwater flow in the Grassy Mountain mine site area was built using existing hydrogeologic data. The existing hydrologic data are based on a limited number of measurements and observations. As such, the model and resulting projections has inherent uncertainty. Nonetheless, the model forms an initial foundation for incorporating future data, which, in turn, should reduce model uncertainty and improve model projections.

1.1. Report Organization

The remainder of this technical memorandum is organized as follows:

- Section 2 provides background information including a description of previous dewatering estimates, information sources, and modeling methods
- Section 3 summarizes the conceptual model
- Section 4 summarizes the analytical methods and results
- Section 5 summaries the numerical methods and results
- Section 6 provides an overall summary of this investigation
- Section 7 presents a summary of a supplemental report on dewatering
- Section 8 provides references

2. BACKGROUND

This section outlines previous dewatering estimates, describes information sources used for this modeling effort, and describes the general modeling methods.

2.1. Previous Dewatering Estimates

ABC (1992) prepared dewatering estimates for the Grassy Mountain resource to support an Environmental Impact Statement, assuming an open pit mine. The estimate was made using a two-dimensional numerical groundwater flow model. The model was used to (1) evaluate re-saturation time frame following mining operations and (2) predict the short- and long-duration effects of the mine project on the regional groundwater table and springs. The model simulated steady-state and transient groundwater flow in a single, unconfined aquifer, with groundwater flow influenced largely by topography.

The following model inputs were used in the ABC (1992) model construction:

- Uniform hydraulic conductivity
  - $2x10^{-3}$ cm/s (5.6 ft/d) in basin, low-elevation areas
  - $1.9x10^{-6}$ cm/s ($5x10^{-3}$ ft/d) in 'general' areas (interpreted to mean higher elevations)
  - $2x10^{-8}$ cm/s ($5.6x10^{-5}$ ft/d) for a simulated fault
  - $1x10^{-9}$ cm/s ($2.8x10^{-6}$ ft/d) for the resource area.
- Uniform recharge of 0.5 in/yr.
- Model thickness of 2,000 feet.
- Uniform specific storage $1x10^{-5}$ 1/L

The ABC model was calibrated to available groundwater-elevation observations to within +/- 40 feet of measured values. Scenarios were evaluated using the calibrated model to predict the amount of groundwater inflow based on the degree to which silicified rock ('shell') was removed from the vicinity of the open pit mine workings. The model predicted potential groundwater flow into the mine workings based on the particular scenario, ranging from:

- Essentially no predicted inflow, assuming that a rind or 'shell' of low permeability material on the order of $1x10^{-9}$ cm/s ($2.8x10^{-6}$ ft/d) remained around the entire perimeter in contact with material with an average permeability of $1.9x10^{-6}$ cm/s ($5x10^{-3}$ ft/d)
- 30 gpm (assuming that a partial shell of low permeability material remained around a portion of the mine working perimeter)
- 3,000 gpm (assuming an overall higher permeability of $1.9x10^{-4}$ cm/s or 0.5 ft/d under a 'partial shell' condition).

Calico Resources' exploration since 1992 has resulted in additional hydrogeologic data and a change in the mining strategy to an underground drift-and-fill operation. In this current

effort we have sought to use these new data (1) to project dewatering requirements and (2) evaluate pumping capacity and associated impacts.

2.2. Methods

A combination of analytical and numerical modeling approaches was used in this current effort to project dewatering and production rates and potential aquifer drawdown impacts. The dewatering estimates were intended to bracket potential groundwater inflow rates based on the expected range in aquifer properties.

2.2.1. Analytical Methods

Two two-dimensional analytical methods were used to evaluate steady-state[1] and transient[2] dewatering effects:

- The steady-state two-dimensional method (Marinelli and Niccoli, 2000) incorporated both horizontal shallow flow and vertical, deeper flow contributions into the resource area. This method uses two steady-state analytical solutions useful for predicting the groundwater inflow to a mine pit excavated below the water table. Although the proposed mining method is drift-and-fill, calculating the inflow to the entire proposed Grassy Mountain Mine area provides a conservative dewatering estimate. The total inflow rate was the sum of the estimated flow rate from both the horizontal and vertical flow components.

- The transient method used the Theis equation (Theis, 1935) to simulate the effects of pumping on drawdown over time with distance from a pumping well. Assumptions inherent to the use of the non-equilibrium Theis equation are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, and receives no recharge; the pumping well penetrates the full aquifer thickness; water removed by discharge is removed instantaneously; the pumping well is 100% efficient; laminar flow exists throughout the aquifer; and the water table or potentiometric surface has no slope. Some of these assumptions are rarely completely satisfied under field conditions, but this method is commonly used for evaluating pumping (or dewatering) questions. In this case, some of the assumptions are clearly not met (e.g., the aquifer is not homogeneous and isotropic, uniform in thickness and areal extent) but nonetheless use of the method gives insight into possible dewatering rates.

2.2.2. Numerical Methods

Numerical groundwater flow modeling under steady state and transient conditions (see Section 5) was performed using the MODFLOW code (Harbaugh, et. al., 2000). Developed

---

[1] Steady-state (or equilibrium) hydraulic conditions are those in which the magnitude and direction of groundwater flow is constant in time.

[2] Transient conditions are those in which the magnitude and direction of groundwater flow may vary in time.

by the U.S. Geological Survey (USGS), MODFLOW is a finite difference code capable of simulating three-dimensional groundwater flow. The code allows for representation of greater complexity than the analytical methods described above, and is commonly used for simulating groundwater flow.

In general, dewatering was simulated in the MODFLOW model by assigning pumping wells along the perimeter and inside the proposed Grassy Mountain Mine, and the groundwater elevation during pumping was compared to the target dewatering elevation. Pumping wells were assigned in the analytical and numerical models to simulate the overall magnitude of aggregate dewatering rates. In reality, dewatering of the underground workings may be performed by booster pumps, sumps, or dewatering galleries, as needed. A limited sensitivity analysis was performed to evaluate the effects of hydraulic conductivity, storativity, and recharge on the results.

2.3. Information Sources

Information used in in this analysis included the following:

- Borehole/well completion and lithologic logs;
- Groundwater levels measured in wells and VWPs;
- Potentiometric surface maps;
- Aquifer pumping tests;
- Recharge/discharge estimates;
- Aerial photographs, topographic maps, surface geologic maps, and geologic cross-sections;
- Aquifer hydraulic properties for lithologic units determined from test pumping and published values for similar materials;
- Water quality data collected from wells and springs; and
- Available published reports.

This information can be found in the baseline or characterization reports.

3. CONCEPTUAL MODEL

This section describes a conceptual understanding of groundwater flow in the vicinity of the proposed mine site. The conceptual understanding, or conceptual model, represents the basis for analytical and numerical modeling. A more detailed conceptual model is outlined in the Groundwater Characterization Report (SPF 2021b).

3.1. Hydrogeology

Groundwater is present in unconsolidated or weakly-consolidated sandstone and conglomerate units and interbedded sediments associated with the Grassy Mountain Formation. Water-bearing zones appear to be somewhat compartmentalized, reflecting faulting, sedimentary facies changes, and silicification. Primary flow occurs in fractures, faults, unconsolidated (or semi-consolidated) materials, and zones or pockets of less-silicified rocks. Material properties such as degree of consolidation, degree of silicification, fracture characteristics, and fault characteristics influence hydraulic conductivity, which in turn influences the rate and magnitude of groundwater flow. Individual aquifer zones are highly heterogeneous as a result of variations in aquifer-material characteristics, lateral and vertical unit pinch-outs, and numerous identified faults/fault zones.

3.2. Recharge and Discharge

Recharge consists of infiltration from precipitation. Annual recharge to groundwater in the vicinity of Grassy Mountain has been estimated in the range of 0.25 to 1 inch based on climatic and topographic conditions (ABC, 1992). Discharge occurs to springs and surface channels at lower elevations. Regional groundwater flow is to the north towards the Malheur River.

Within the Grassy Mountain vicinity, numerous individual springs (some ephemeral) have been identified and monitored for flow and water quality during investigations for baseline and background characterization purposes. The majority of springs have measured flow rates of less than one gpm, although the flow rate in several springs has been measured over 1 gpm. The annual average discharge from monitored springs located on the north side of the Grassy Mountain hydrologic divide is on the order of approximately 30 gpm based on flow measurements collected between 2013 and 2017. There are additional springs farther downgradient that were not monitored for flow that could also serve as regional groundwater discharge points. The total aggregate visible groundwater discharge is an indicator of the low annual recharge rate. For example, if the watershed contributing to spring flow is 25 square miles, the visible discharge rate of 30 gpm reflects an average recharge rate of approximately 0.04 inches per year.

Flow directions are generally perpendicular to topographic contours. The groundwater flow direction is predominantly to the northwest and more or less continuous in the vicinity of the proposed Grassy Mountain Mine. The horizontal hydraulic gradient is relatively high in upland areas, reflecting the steep topography, recharge areas, and predominantly low permeability of subsurface deposits. The gradient lessens in lower elevation areas coinciding with flatter topography and areas of groundwater discharge.

Short term pumping rates from wells within the immediate vicinity of the proposed Grassy Mountain Mine range from less than a few gallons per minute (gpm) up to a few tens of gallons per minute. Pumping rates further away from the proposed Grassy Mountain Mine are higher (up to 145 gpm in PW-4). Apparent negative boundaries, reflecting the

compartmentalized nature of geologic materials, were apparent in most wells. These boundaries limit sustainable pumping rates from wells.

3.3. Single Aquifer System

Faults and fractures, lithologic facies changes, and silicification of formation sediments are responsible for substantial heterogeneity on a local scale. However, the aquifer appears to be somewhat more homogeneous (i.e., homogeneously heterogeneous) on a regional scale.

There is insufficient evidence to identify discrete zones within the project area that are isolated or partially isolated from other zones. In general, assignment of discrete zones is based on several criteria, with the designation being somewhat subjective and relative as a function of scale:

- Physical separation of higher permeable deposits (aquifers) by lower permeable deposits (aquitards)
- Hydraulic communication (i.e., similar groundwater elevation trends)
- Similar lithologic, water quality and geochemical characteristics.

There are clearly heterogeneous, compartmentalized, discrete water-bearing zones in the general mine vicinity (JMM 1991; ABC 1992; SPF 2021b). Water-bearing zones may be laterally discontinuous, have lower permeability than surrounding areas (such as would be the case with local clay and siltstone, competent bedrock, and silicified deposits), and have joints or structural barriers (e.g. faults) to groundwater flow (SPF 2021b). Aquifer material, water levels, and flow characteristics vary spatially and by depth.

The concept of a single aquifer system is proposed, and is consistent with previous investigations. This single aquifer system contains discrete water-bearing zones that are laterally discontinuous and partially separated by structural barriers to groundwater flow.

The presence of a deeper, regional aquifer has been contemplated based on the measured groundwater elevations over time in Well 59762 (approximately 3,100 feet above mean sea level, amsl), compared to other nearby wells with groundwater elevations of 3,200 feet amsl or higher (SPF 2021b). Well 59762 was completed to approximately 700 feet bgs, deeper than other wells installed in the resource vicinity. In terms of elevation, however, other, hydraulically downgradient wells are actually screened over a comparable or lower elevation (i.e., GW-4, PW-4, Prod-1, and GW-6) but exhibit higher groundwater elevations. Since well 59762 was installed, one additional deep well (GMW17-32) was installed downgradient of the deposit area in 2017, and several deep vibrating wire piezometers (VWPs) have been installed directly within the highly silicified deposit in the location of the proposed Grassy Mountain Mine (SPF 2017). Those installations have deeper groundwater elevations similar to Well 59762 (i.e., 3,000 to 3,100 feet amsl range), supporting the concept of a deeper zone within the aquifer system, at least in the vicinity of the silicified deposit.

The presence and quantity of groundwater within deposit area of the proposed Grassy Mountain Mine can be described based on water reported during exploratory drilling, monitoring well construction and testing, and VWP water level data.

Figure 2 shows the proposed Grassy Mountain Mine, along with selected drill holes, monitoring wells, and piezometers. The holes with reported water are noted, with depth, elevation, and quantity of water as observed by the well driller. The quantity of water refers to flow of water air-lifted from the hole during drilling; there is not an indication of duration of flow in the driller notes. Within the footprint of the deposit area, most of the drill holes did not encounter any water (as shown on Figure 2). Of the holes that did encounter water, flows were less than 25 gpm and often from a depth of more than 800 feet (below an elevation of 3,000 feet). When drill holes encountered water outside the deposit area, higher flows in excess of 50 gpm were occasionally noted, generally east of the proposed Grassy Mountain Mine. This area is typically less silicified. Higher well yields are likely associated with less silicified materials. It is also possible that the Badger and Schweizer faults act as barriers to groundwater flow on the east and south sides of the proposed Grassy Mountain Mine.

Figure 2 also includes the monitoring wells in the immediate vicinity of the deposit area, with elevation of the screened interval and short-term production noted. The deeper wells screened below an elevation of about 3,200 feet are dry or poor producers. GMW17-33 (screen interval 3,466-3,366 feet) is a moderately productive well; the well was test pumped at an average rate of 28 gpm for about 2 days before a negative boundary caused the pumping water level to reach the pump. Additional information is provided in the Groundwater Characterization Report (SPF 2021b).

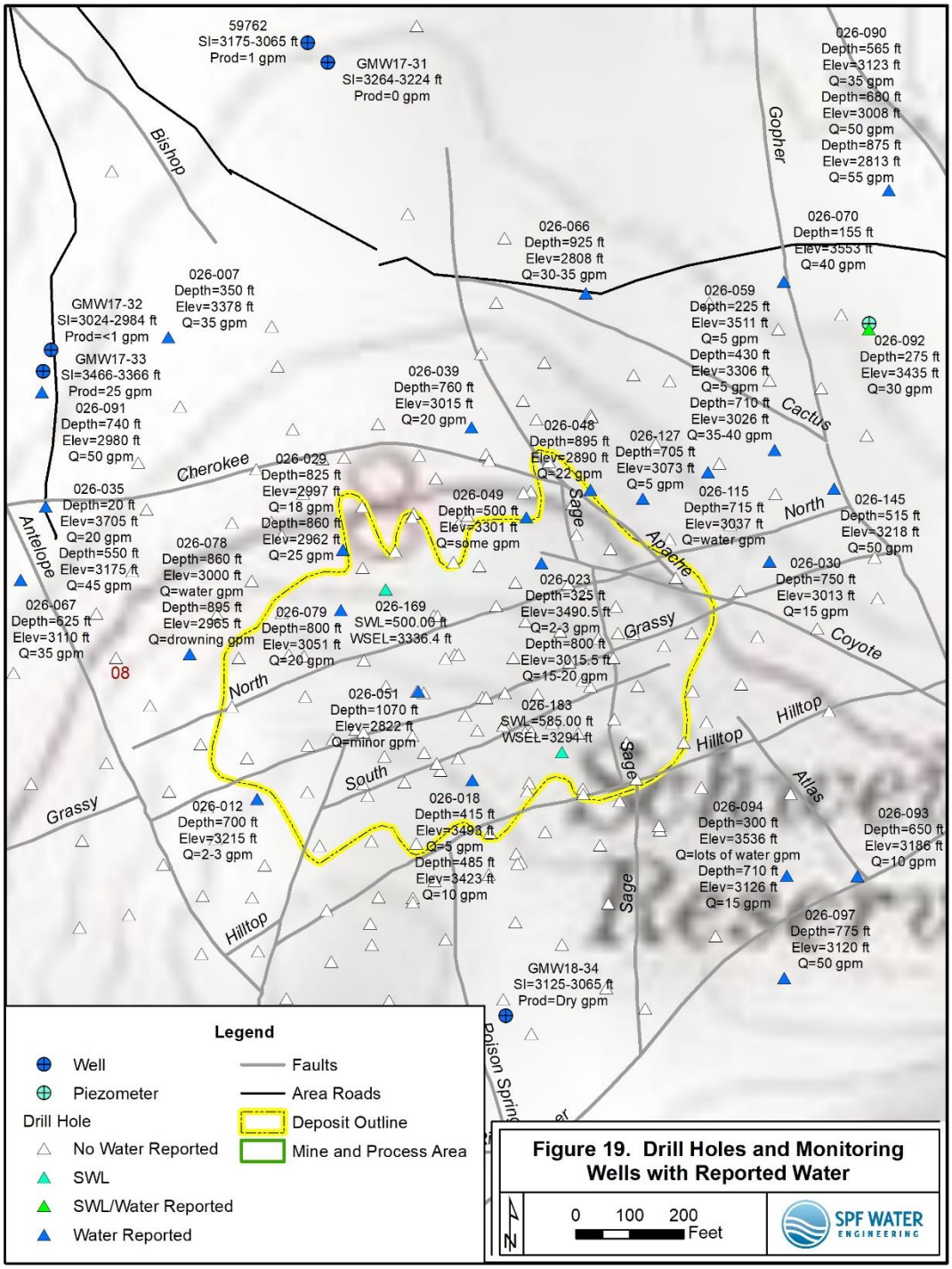

Figure 2. Drill holes and monitoring wells with reported water

Installation of an upgradient deep monitoring well in 2018 (GMW18-34) helps define the extent of the silicification of the aquifer on the upgradient side of the proposed Grassy Mountain Mine. This monitoring well was drilled approximately 40 feet into the underlying Kern Basin Tuff to 950 feet bgs (3,003 feet amsl) with no indication of available groundwater and was screened from 830 to 890 feet bgs (3,127 to 3,067 feet amsl) with no static water level measured to date. The current VWP installations, combined with deep wells, indicate the potential exists to encounter groundwater within the resource area both above and below the target dewatering elevation of approximately 3,100 feet amsl, with lower static groundwater elevations found in water-bearing zones at depths of more than approximately 500 feet below ground surface.

As previously discussed in the Groundwater Characterization Report (SPF 2021b), pervasive silicification of sediments also has a major impact on groundwater conditions within the proposed Grassy Mountain Mine. It is likely that the combination of silicification, faulting, and the interbedded low-permeability sediments serve to impede groundwater flow into and within the proposed Grassy Mountain Mine. Even with the Schweizer and Badger faults apparently acting as a lower permeable barriers in the sandstone and arkose, it is possible for faulting to be the cause of increased permeability in the underlying tuff if localized silicification caused the tuff to become more brittle, thereby increasing fracturing during faulting. With significantly more faulting near the proposed Grassy Mountain Mine than the rest on the study area, in combination with localized silicified, brittle tuff, it is possible that silicified sediments within the Mine footprint are draining into the underlying tuff. In other words, the fractured tuff may have a high enough hydraulic conductivity to drain the small amount of water that can flow into the overlying compartmentalized sections of silicified sediments from upgradient areas.

The overall direction of groundwater flow and hydraulic gradients are similar for shallow and deeper wells; groundwater levels in shallow and deeper wells both suggest a strong topographic influence. The geochemistry in both shallow and deep wells is similar (i.e., without a clear distinction based strictly on vertical/depth trends). Thus, while there may be distinctions between shallow and deeper aquifer zones, there appears to be a coherent regional flow system in the general mine area.

There are insufficient data to fully describe – or simulate – the complex, heterogeneous nature of aquifer materials within the study area. Available data do not allow a highly complex depiction of the aquifer system. Thus, the resolution of the models used in this investigation that simulate this system are intended to capture aggregate, overall behavior of groundwater flow and hydraulic gradients and not necessarily the exact conditions at a single location (i.e., well or piezometer).

4. ANALYTICAL APPROACH

Two analytical approaches were used to evaluate potential dewatering needs; one analytical solution was used to project production-well drawdown impacts. This section describes these approaches and corresponding results.

4.1. Dewatering

Inflows under steady-state conditions (see Section 4.1.1) were projected using analytical equations by Marinelli and Niccoli (2000); inflows under transient conditions were evaluated using the Theis equation (Section 4.1.2).

- For the steady-state analysis, potential groundwater inflow into the proposed mine workings were estimated from (1) shallow aquifer zones present at the same elevation as mine workings and (2) a deeper zone within the aquifer beneath the mine workings. The rate obtained from the steady-state approach reflects equilibrium, long-duration dewatering conditions and does not necessarily reflect dewatering estimates under a short-duration. Initially, higher pumping rates are anticipated due to higher groundwater inflow during the early stages of dewatering. Dewatering requirements are expected to lessen over time as dewatering takes place in the surrounding aquifer until steady-state conditions are ultimately reached.

- The transient analysis, outlined in Section 4.1.2, involved performing Theis drawdown calculations (Theis, 1935) to evaluate potential short-duration pumping requirements. This method calculates drawdown effects with distance from the pumping location over time. The assumed pumping center is in the middle of the resource area, and theoretical drawdown is calculated at a distance that coincides with the edge of the resource area (i.e., approximately 0.1 mile from the center of the proposed Grassy Mountain Mine).

Both methods require simplifying assumptions. For example, the analytical methods used a single value to represent aquifer properties (i.e., transmissivity and storativity) at a fixed, constant pumping rate. In reality, the aquifers around and beneath the resource area are complex, heterogeneous and, variable. Nonetheless these methods provide insight into possible dewatering rates and pumping impacts.

4.1.1. Steady State Analysis

4.1.1.1. Equations

The Marinelli and Niccoli (2000) equation used to evaluate potential inflow rates into the mine workings consists of the following:

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

where:

h_0 = initial (pre-mining) saturated thickness above the base of Zone1 (shallow aquifer)

h_p = saturated thickness above the base of Zone 1 at the effective radius (outer extent) for the mine workings

W = recharge to the water table

K_{h1} = horizontal hydraulic conductivity

r_0 = maximum radius of influence (calculated value)

r_p = effective radius of the mine workings.

This solution accounts for uniform recharge applied at the water table with a saturated aquifer of uniform hydraulic conductivity. Groundwater flow is horizontal (assuming an initial relatively flat hydraulic gradient exists before dewatering takes place).

The radius of influence (r_0) from groundwater inflow along the mine walls is determined by iteration using the above equation, using on the radius of the mine workings, initial saturated thickness of the aquifer, and target drawdown extent for Zone 1 (shallow aquifer) at the fully dewatered state. With r_0 from the above equation, the rate of inflow can then be determined from the following equation:

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

where:

Q1 = inflow rate into the walls of the mine workings

W = recharge

r_0 = maximum radius of influence

r_p = effective radius of the mine workings.

In this exercise we assumed a saturated aquifer thickness of 580 feet based on a groundwater table elevation of 3,680 feet amsl near the upgradient end of the proposed Grassy Mountain Mine and a target dewatering elevation of approximately 3,100 feet amsl,

with 100% dewatering. This value for saturated thickness represents an assumed maximum thickness, as the actual aquifer thickness contributing to groundwater flow is likely less. Based on monitoring of VWP sensors installed during 2017 within the proposed Grassy Mountain Mine, groundwater was encountered at elevations ranging from approximately 3,075 to 3,400 amsl (SPF, 2017). VWP units were installed at five, angled borehole locations, with three VWP sensors installed per borehole. Installations were primarily located on the eastern side of the proposed Grassy Mountain Mine. Information on the occurrence of groundwater reflects these locations and does not necessarily conditions in other areas of the proposed Grassy Mountain Mine.

A second set of equations represents vertically upward flow from the deep aquifer beneath the mine through the bottom of the mine workings (Zone 2), should this condition be encountered. The combined inflow from Zone 1 and Zone 2 represents the total predicted inflow into the mine workings.

The following equation solves for the predicted inflow into the mine workings through the bottom of the mine (Zone 2):

$$Q_2 = 4\, r_p \left(\frac{K_{h2}}{m_2}\right) (h_o - d)$$

$$m_2 = \sqrt{\frac{K_{h2}}{K_{v2}}}$$

where:

Q_2 = inflow rate into the bottom of the mine workings

r_p = effective radius of the mine workings

K_{h2} = horizontal hydraulic conductivity within Zone 2

K_{v2} = vertical hydraulic conductivity within Zone 2

m_2 = anisotropy parameter (to account for variations in horizontal and vertical hydraulic conductivity)

h_0 = initial (pre-mining) saturated thickness above the base of Zone1 (shallow aquifer)

d = depth of the water in the mine workings (assumed to be negligible during full dewatering).

These equations were developed for estimating inflow into an open pit of certain dimensions.[3] Although the proposed mining operations for Grassy Mountain are based on subsurface mining techniques and not an open pit scenario, the use of these equations represents aggregate, potential flow to the mine. Other techniques for estimating potential dewatering were evaluated to provide a multiple lines-of-evidence approach, particularly given the stated limitations for the steady-state method (i.e., relatively flat initial water table). In reality, the horizontal hydraulic gradient throughout the proposed target area is relatively steep in some areas which may not accurately predict inflow rates.

4.1.1.2. Scenarios and Results

Three general scenarios (i.e., 1, 2, and 3) were used to evaluate potential steady-state inflows. These scenarios are distinguished by low, intermediate, and high hydraulic conductivity values (ranging from 10^{-6} cm/s to 10^{-4} cm/s, or 0.003 ft/d to 0.3 ft/d) for the shallow aquifer zone, and low hydraulic conductivity (10^{-6} cm/s, or 0.003 ft/d) for the deep zone (Table 1). These values reflect the typical measured range in transmissivity (and hydraulic conductivity) from historical and recent pumping tests. Recharge rates ranging from 1 in/yr to 0.07 in/yr were used while holding all other input parameters constant. Based on previous modeling efforts (ABC 1992) and observed discharge from area springs, recharge values of 0.5 in/year or less are the most likely conditions.. Vertical isotropy was assumed in all cases (although, in reality, this parameter likely varies one to two orders in magnitude). Variations in each scenario included lowering the recharge rate to 1 in/yr and 0.07 in/yr while holding all other input parameters constant.

Several of the same inputs used for Zone 1 estimates are also used for Zone 2. The initial water table for Zone 2 is assumed to be the same as Zone 1.

[3] Several assumptions apply to the equations including a decrease in saturated aquifer thickness as the water table is lowered during dewatering, predominant inflow through upward flow components as opposed to lateral seepage effects through the walls of the mined areas, semi-infinite aquifer conditions beneath the mine with no impermeable boundary effects, steady-state flow conditions, and no flow between Zones 1 and 2.

Table 1. Steady-state estimated groundwater inflow rates

Scenario	Description	Shallow Hydraulic Conductivity, K (Zone 1)	Deep Hydraulic Conductivity, K (Zone 2)	Recharge (in/yr)	Estimated Discharge (gpm)		
					Shallow (Zone 1)	Deep (Zone 2)	Combined Zones
1	Low K (shallow); High Rch	$1x10^{-6}$ cm/s (0.003 ft/d)	$1x10^{-6}$ cm/s (0.003 ft/d)	1	24	15	39
1a	Low K (shallow); High Rch			0.5	12	15	27
1b	Low K (shallow); Mid Rch			0.25	10	15	25
1c	Low K (shallow); Low Rch			0.07	8	15	23
2	Mid K (shallow); High Rch	$1x10^{-5}$ cm/s (0.03 ft/d)	$1x10^{-6}$ cm/s (0.003 ft/d)	1	146	15	161
2a	Mid K (shallow); High Rch			0.5	73	15	88
2b	Mid K (shallow); Mid Rch			0.25	64	15	80
2c	Low K (shallow); Low Rch			0.07	53	15	68
3	High K (shallow); High Rch	$1x10^{-4}$ cm/s (0.3 ft/d)	$1x10^{-6}$ cm/s (0.003 ft/d)	1	1,002	15	1017
3a	High K (shallow); High Rch			0.5	501	15	516
3b	High K (shallow); Mid Rch			0.25	457	15	472
3c	High K (shallow); Low Rch			0.07	394	15	409

The results suggest half an order of magnitude variation in the inflow rate between each of the three scenarios when using a recharge rate of 0.5 in/yr or less (i.e., approximately 27 gpm for Scenario 1; 88 gpm for Scenario 2; and 516 gpm for Scenario 3). Lowering the recharge rate did not significantly change the predicted inflow. Supporting equations for Zones 1 and 2 and calculations for each scenario are provided in Appendix A. In each scenario, using a recharge rate of 1 in/yr doubles the highest estimated inflow value.

It has been previously stated that the best estimates for recharge rates are between 0.25 and 1 in/year based on climate and topographic conditions (ABC, 1992). The model from the same report used an assigned recharge rate of 0.5 in/year and monitored spring flow from 2013 to 2017 supports a lower annual recharge rate as discussed in Section 3.2.

4.1.2. Transient Analysis

The Theis analytical method (Theis, 1935) yields a theoretical projection of potential drawdown effects associated with pumping to achieve mine dewatering over a period of time. In contrast, the steady state method described above does not account for variations in drawdown over time. Thus, the Theis method was used to evaluate the amount of time that may be necessary to dewater the mine workings to the target elevation of approximately 3,100 feet.

For this analysis, it was assumed that a single pumping well placed at the center of the mine workings could be used to evaluate the predicted drawdown at a distance from the pumping well that coincided with the perimeter of the mine workings. In reality, dewatering of the underground workings may utilize booster pumps or sumps placed as needed as opposed

to a vertical well. Based on an approximate radius of 450 feet (roughly 0.1 mile), the pumping rate was adjusted to achieve the maximum projected drawdown of roughly 600 feet (i.e., 3,700 feet elevation minus 3,100 feet elevation) at 0.1 mile.

For scenario 2a, the most likely scenario (mid T, mid S), we assumed an aquifer transmissivity of 100 gallons per foot per day (gpd/ft), which is within the typical range based on aquifer testing (i.e., on the order of a few 10s to 250 gpd/ft, excluding PW-4 outlier), and storativity of 0.005 (upper range for confined conditions). Assuming a saturated aquifer thickness of 200 feet, the 100 gpd/ft transmissivity is equivalent to a hydraulic conductivity of 0.07 ft/day (2 x 10^{-5} cm/s) and is within the range of estimated values derived from pumping tests conducted within the vicinity of the resource area. The actual aquifer thickness varies across the resource area; however, this assumed value provides an upper-end of expected drawdown. The storativity of 0.005 represents the upper range for confined aquifers (0.005 to 0.00005) based on literature reported values (Freeze and Cherry, 1979).

Based on the Theis analysis, the predicted pumping rate needed to achieve the total drawdown in the pumping well was estimated to be roughly 250 gpm for one year. Actual drawdown effects will vary depending on actual aquifer conditions encountered within the resource area and the well efficiency. The predicted drawdown after one year of continuous pumping was approximately 600 feet at 0.1 mile from the pumping location in the center of the mine workings (Figure 3).

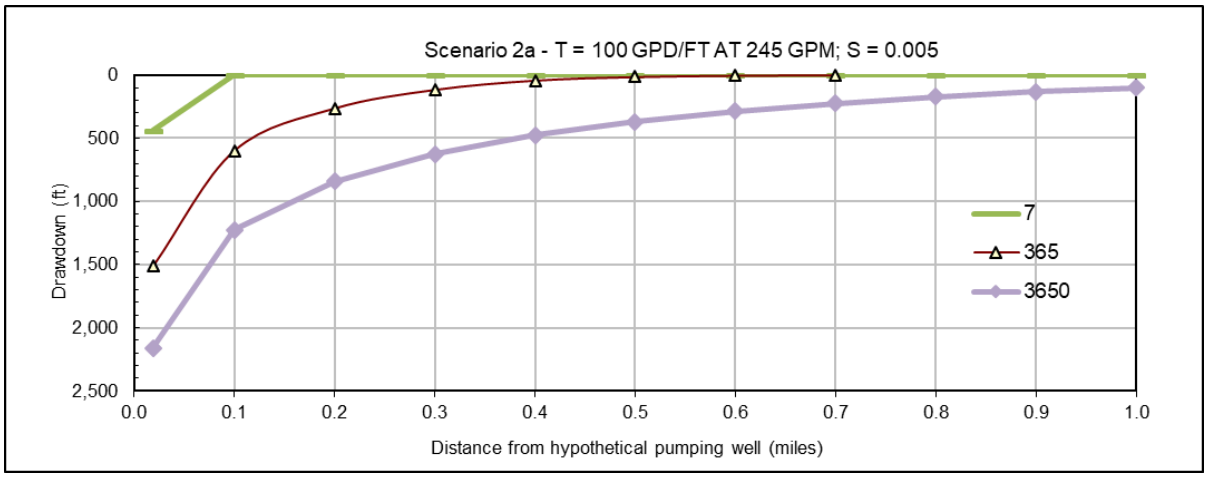

Figure 3. Theis predicted drawdown (100 gpd/ft and 250 gpm scenario for 7 days, 365 days, and 3650 days).

In reality, a single well will not sustain a pumping rate of 250 gpm due to excessive drawdown effects and unsustainable yield at that rate; several wells and/or pumps within the

mine workings will be required to dewater the mine area. However, this simulation helps describe an order-of-magnitude pumping requirement to achieve the desired amount of dewatering.

Multiple scenarios were used to examine different hydraulic conductivity and storativity assumptions (aquifer thickness was assumed to remain the same). Hydraulic conductivity values of 0.003 ft/d, 0.07 ft/d, and 0.3 ft/d were assumed for Scenarios 1, 2, and 3, respectively. The storativity values ranged from a low confined aquifer value of 0.00005, with the mid-range semi-confined value of 0.005, and a high value of 0.05 indicative of unconfined conditions. The pumping rate was adjusted in each case (ranging from 6 gpm to 1,600 gpm) to produce 600 feet of drawdown across the resource area after one year of pumping. The 0.003 ft/day and 400 gpm scenario is not feasible because a 400-gpm pumping rate could not be developed or sustained without many thousands of feet of drawdown at the center of the cone of depression.

Lowering the storativity value to the lower-end range of 0.00005, had the effect of lowering the pumping rate necessary to achieve the target drawdown. Raising the storativity value to the higher-end range of 0.05, had the effect of increasing the pumping rate necessary to achieve the target drawdown, and in one case (low transmissivity), made it impossible with a single well. Supporting calculations for the Theis drawdown estimates are provided in Appendix B. Results of the multiple scenarios are provided in Table 2 below.

Table 2. Theis analytical model predicted dewatering flows

Scenario	Description	Transmissivity, T (gpd/ft)	Storativity, S (dimensionless)	Approximate Flow Required to Dewater 500 Feet at a Distance of 0.1 Mile After One Year (gpm)
1	Low T; Low S	4	0.00005	6
1a	Low T; Mid S	4	0.005	380
1b	Low T; High S	4	0.05	>1,000,000
2	Mid T; Low S	100	0.00005	80
2a	Mid T; Mid S	100	0.005	245
2b	Mid T; High S	100	0.05	1,450
3	High T; Low S	400	0.00005	260
3a	High T; Mid S	400	0.005	605
3b	High T; High S	400	0.05	1,600

4.2. Production Well Drawdown Impacts

The Theis method used for estimating dewatering rates was also used to project the aquifer impacts due to production well pumping over the life of the mine. The same limitations and assumptions described above for mine dewatering also apply to the estimation of aquifer impacts from production water pumping.

In this analysis we evaluated impacts of pumping 320 gpm from a single well, although current estimates of the groundwater demand by the mine are much lower (i.e., on the order of 50 gpm). In reality, several production wells are planned within an approximate 0.27-mile radius of PW-4. Furthermore, wells Prod-1, PW-1 and possibly Well 6, which are located approximately 0.71 miles, 2.06 miles, and 1.44 miles south of PW-4, respectively, could also be available for production.

A near well aquifer transmissivity ranging from 1,700 gpd/ft (after negative boundary) to 3,800 gpd/ft (before negative boundary) and storativity of 7.0×10^{-5} were calculated from an aquifer test performed at PW-4 in 1989 (SPF 2021b). A range of transmissivities and storativities spanning these calculated values were used to analytically predict the drawdown from production well pumping.

The predicted drawdown from production well pumping calculated by the Theis analytical model is presented as Table 3 below. As mentioned before, this method does not account for recharge. It is used to show the maximum possible extent of the cone of depression from the production wells pumping after ten years. Supporting data and plots for each scenario are also provided in Appendix B.

Table 3. Theis analytical model predicted production well drawdown

Scenario	Description	Transmissivity, T	Storativity, S	Calculated Drawdown After Ten Years (feet)		
				One Mile	Four Miles	Seven Miles
1	Low T; Low S	1,500 gpd/ft	0.00005	172.92	105.31	78.33
1a	Low T; Mid S		0.0005	116.74	50.66	26.86
1b	Low T; High S		0.005	61.48	8.14	0.60
2	Mid T; Low S	4,000 gpd/ft	0.00005	73.84	48.44	38.23
2a	Mid T; Mid S		0.0005	52.74	20.45	17.83
2b	Mid T; High S		0.005	31.78	8.64	2.49
3	High T; Low S	10,000 gpd/ft	0.00005	32.89	22.73	18.63
3a	High T; Mid S		0.0005	24.45	14.32	10.31
3b	High T; High S		0.005	16.03	6.25	2.91

5. NUMERICAL METHODS

The analytical methods used to project dewatering requirements and possible impacts from pumping (see Section 4) are simplified solutions for analyzing a complex problem. A numerical model was constructed to further evaluate potential dewatering requirements and groundwater-production impact. A numerical model is also a simplified representation of a complex system, but allows more simulation flexibility (such as including a sloping aquifer and multiple pumping wells). This section describes model construction, parameter values, calibration results, sensitivity analysis, and the results from an additional dewatering scenario.

5.1. Code Selection

The USGS code MODFLOW 2000 (Harbaugh, A.W, et. al., 2000) was used for performing numerical groundwater flow modeling and dewatering projections. MODFLOW uses a modular finite-difference approach for simulating groundwater flow in three dimensions. MODFLOW is considered as the industry standard and is widely accepted within the hydrologic community for dewatering applications.

Groundwater Vistas (GV) was used to construct and execute MODFLOW simulations. GV was developed by Environmental Simulations Incorporated as a graphical user interface for pre- and post-processing of MODFLOW files (ESI, 2011). GV supports geographic information system (GIS) files for data visualization.

5.2. Spatial and Temporal Discretization

The following summarizes the spatial and temporal setup in the model.

The model extent was approximately 10 miles by 10 miles, centered on the proposed Grassy Mountain Mine. The southern model boundary extended to portions of Owyhee Reservoir and the Owyhee River. The northern boundary extended north of Poison Creek. The eastern and western boundaries were set to comparable distances from the proposed resource and did not necessarily coincide with physical features. This domain was selected to minimize the potential effects of setting the boundary and assigned conditions too close to the proposed resource and thereby influencing the model's prediction of groundwater levels and drawdown from pumping in the resource area.

The model grid was comprised of 264 rows and 264 columns with uniform grid cell dimensions of 200 feet by 200 feet. The model was rotated 45 degrees counterclockwise to approximate the general, predominant direction of groundwater flow to the northwest in the vicinity of Grassy Mountain and the resource area. This rotation effectively allows groundwater flow to be simulated in three dimensions.

The coordinate system for the model was NAD 1983, State Plane Oregon, South, FIPS 3602 in feet with Lambert Conformal Conic projection.

The model consisted of three layers (layer 1, layer 2, and layer 3) defined to reflect topographic influences on groundwater flow:

- Layer 1 was typically 100 feet in thickness and formed the uppermost layer defined by the topographic surface. This layer represents surficial and shallow lithology and contains boundary conditions for select surface water features represented in the model (as drain and river cells) described in the next section. Layer 1 was simulated as an unconfined layer condition, where transmissivity was allowed to vary.

  The surface of the model was created from a digital elevation model (DEM) of topography with 30-meter (approximately 100 foot) resolution (USGS, 2017)[4]. The USGS created the DEM from surface topography maps converted into digital format. Once the DEM was imported into the model, the top elevation of Layer 1 ranged from approximately 2,115 feet to 4,733 feet amsl.

- Layer 2 was the middle layer, intended to represent the shallow aquifer system and has a non-uniform thickness, ranging from less than 100 feet in lower-topography areas to nearly 1,000 feet at the center of the model. This layer contains most of the monitoring wells used as calibration targets for the model. This layer was assigned a uniform bottom elevation of 3,100 feet in the resource area as the target depth for dewatering. Pumping simulations were evaluated by comparing the predicted groundwater elevation to the 3,100-foot elevation level to assess magnitude of dewatering needs to achieve 100 percent dewatering in the resource area. Layer 2 was simulated as a confined condition.

- Layer 3 was the lowest layer in the model, with non-uniform thickness and an assigned uniform model base of 2,000 feet amsl. The bottom of this layer is implicitly a no-flow boundary. Layer 3 was simulated as a confined condition.

Numerical model simulations were performed under steady-state and transient conditions. The steady-state system reflects the groundwater flow regime once equilibrium has been established and does not account for changes in groundwater levels over time, which may occur on the order of decades or longer.

5.3. Initial and Boundary Conditions

Initial and boundary conditions represented in the model are intended to reflect actual, hydraulic boundaries to the extent possible based on available information. Boundary

[4] The DEM was downloaded from the website: https://earthexplorer.usgs.gov/. The data source for the DEM is the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model.

conditions assigned in the model included constant head, river, drain, and no-flow boundaries (Figure 4).

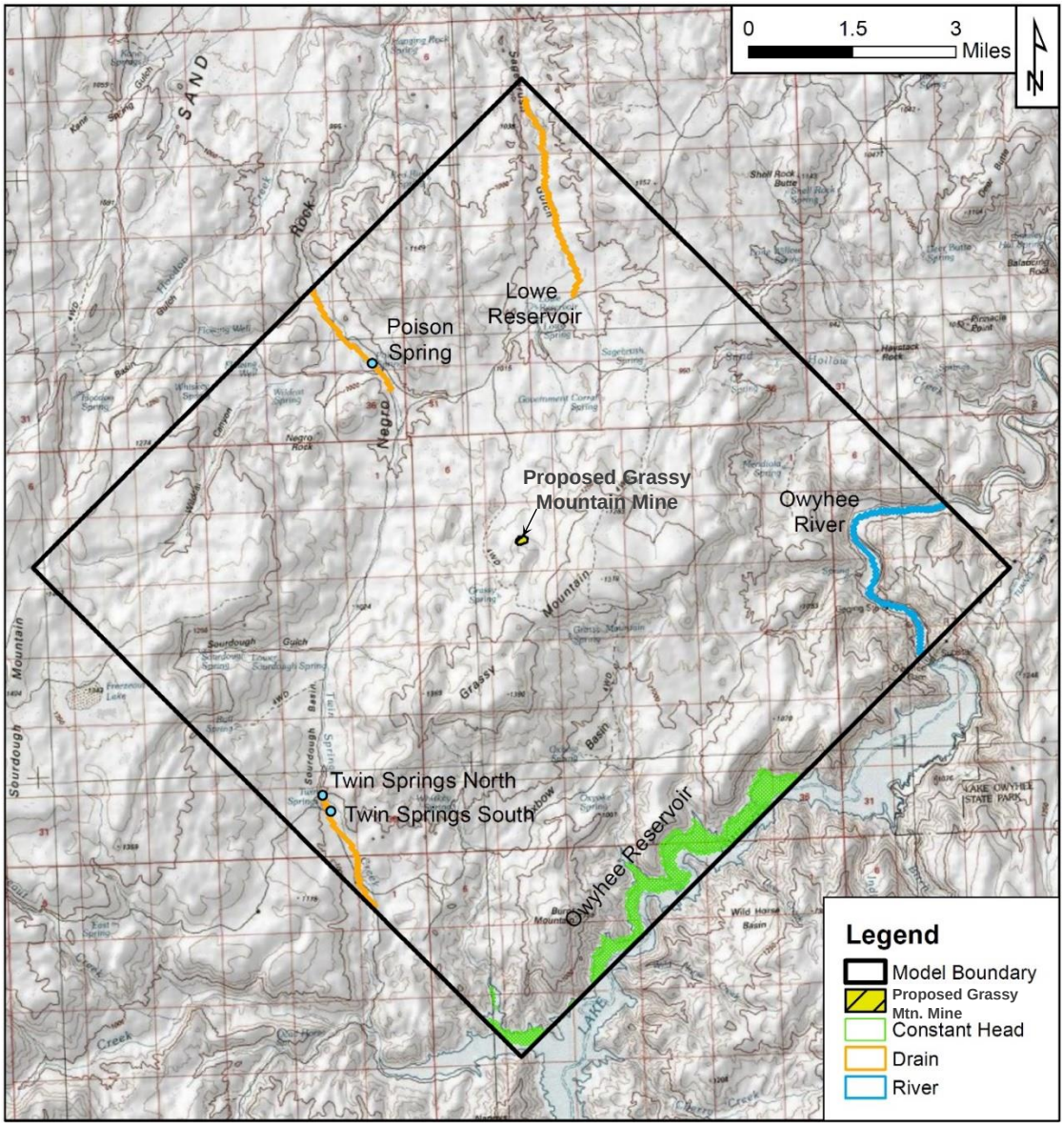

Figure 4. Model boundary conditions

5.3.1. Initial Conditions

The top elevation in layer 1 (surface topography) was assigned as the initial head condition for the model.

5.3.2. Constant Head Boundary

The constant head boundary fixes the groundwater elevation at a constant level and can be assigned to surface water features that fully contact the aquifer (McDonald and Harbaugh, 1988). A constant head boundary was assigned in all model layers to the portion of the Owyhee Reservoir that intercepts the southern model extent. A value of 2,655 feet elevation was assigned uniformly based on the topographic normal pool elevation for the reservoir (Ferns and Ramp, 1989).

5.3.3. River Boundary

Rivers can be gaining (effectively removing groundwater from the aquifer system) or losing (contributing flow to the aquifer system). A river boundary was assigned to the portion of the Owyhee River that intercepts the southeastern corner of the model in Layer 1. The river was assigned in the model as a single reach with the stage assigned at the DEM surface elevation value for model cells coinciding with the upstream end (approximately 2,391 feet elevation) and downstream end (approximately 2,305 feet elevation). A uniform value of 10 feet was assumed as the riverbed thickness and width for all river cells, and the length of the river was automatically assigned based on the model cell size. The hydraulic conductivity for the riverbed was assigned the same value as the adjacent alluvial aquifer material.

5.3.4. Drain Boundary

Drains only remove water from the model if the groundwater head rises above a fixed elevation. The rate of removal is proportional based on the groundwater head and the specified elevation (McDonald and Harbaugh, 1988). Drains can be used to simulate the effects of springs as local discharge locations.

A drain boundary condition was assigned to select spring features within Layer 1 of the model including Poison Spring (north of the resource area), Lowe Spring (northeast of the resource area), and Twin Springs (southwest of the resource area). Drain reaches were assigned in areas of low topography with stage elevations based on the DEM surface elevation coinciding with the springs. Inclusion of drains in the model (particularly in the area around Poison Spring) improved the overall water balance by allowing flow to exit the northern half of the model downgradient of Grassy Mountain.

5.3.5. No Flow Boundary

No-flow boundaries represent impervious surfaces. No-flow boundaries were automatically assigned at the bottom of the model (the base of Layer 3) and implicitly along the perimeter of the model when no other boundary condition was specified.

5.4. Hydraulic Properties

This section describes hydraulic properties assigned in the model including hydraulic conductivity and recharge. Recharge is a type of boundary condition that represents infiltration at the water table. In GV, recharge is categorized as a property.

5.4.1. Hydraulic Conductivity

Hydraulic conductivity was assigned in GV using a zone approach. Areas with the same hydraulic conductivity can be assigned to the same zone. Zones were created to loosely reflect surficial geology and were extrapolated to subsurface conditions.

Surficial geology was obtained from several sources (Calico Resources, 2015; Fern and Ramp, 1989; Ferns and Cummings, 1992; and Cummings, 1993). Maps were scanned, registered to the same coordinate system and projection as the model, and imported into GV to inform the assignment of hydraulic conductivity zones based on apparent similar lithologies. General zones were created to simulate shallow alluvium and sedimentary deposits primarily in drainage areas (Qal and Qls), sandstone, siltstone, and conglomerate (Tas and Tis), the undifferentiated Grassy Mountain Formation (Tgs), basalt (Tgb, Tnrb, Trsb), rhyodacite (Trd), alteration areas within and near the resource (designated by Calico Resources), and Kern tuff (Tkt). The hydraulic conductivity distribution assigned in the model to Layer 1, 2, and 3 are shown on Figure 5, Figure 6, and Figure 7, respectively.

Fault features or zones were not explicitly simulated in the model. Instead, hydraulic conductivity zones were assigned to attempt to match the overall distribution of groundwater flow and hydraulic gradient. When evaluating the trends in groundwater flow within the resource area, fault features appear to have some influence locally, but these effects appear to be dampened when looking at the overall trends on a more regional scale.

Initial values for hydraulic conductivity were based on the range of values reported from previous modeling (ABC, 1992) and the results of pumping tests. Values were adjusted during limited model calibration (described below) to achieve a match to the hydraulic gradient and overall direction of groundwater flow in the resource area (Table 4). K values for the materials listed below are consistent with those provided in Freeze and Cherry, 1979 and Fitts 2013.

Table 4. Model hydraulic conductivity (ft/day)

Zone	Description	Kx = Ky	Kz
1	Basin deposits (siltstone, sandstone, unconsolidated)	0.214	0.105
2	Alluvium (Qal, Qls)	5.57	2.18
3	Siltstone, sandstone (Tis)	0.676	0.347
4	Resistent topography and basalt	0.001	0.001
5	Altered zones (within and near deposit)	0.0031	0.0031
6	Rhyodacite dome	0.0007	0.0007
7	Deeper deposits and Kern Tuff (Tkt)	0.0025	0.0013
8	Higher topography region to south	0.0025	0.0025

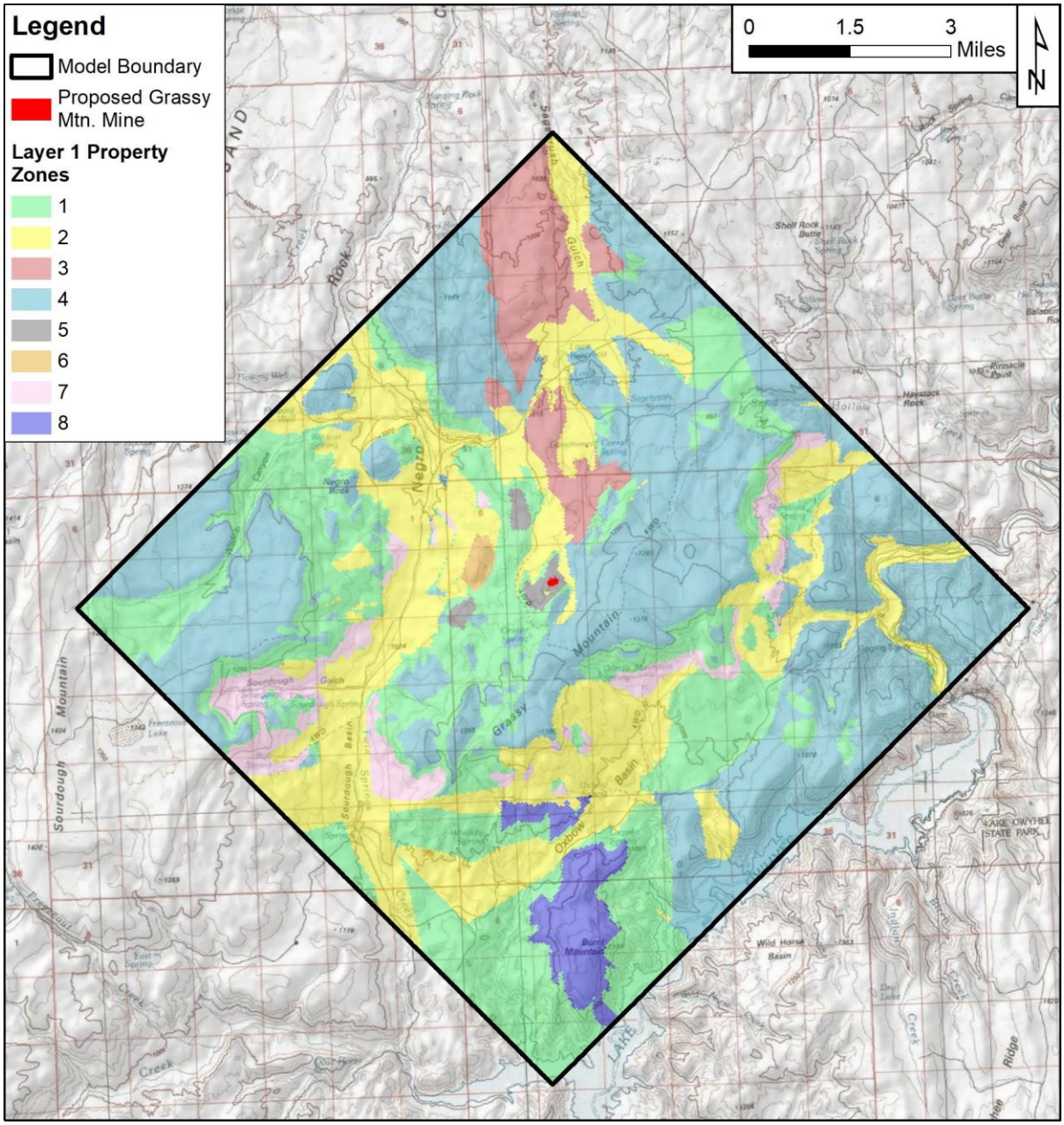

Figure 5. Layer 1 property zones

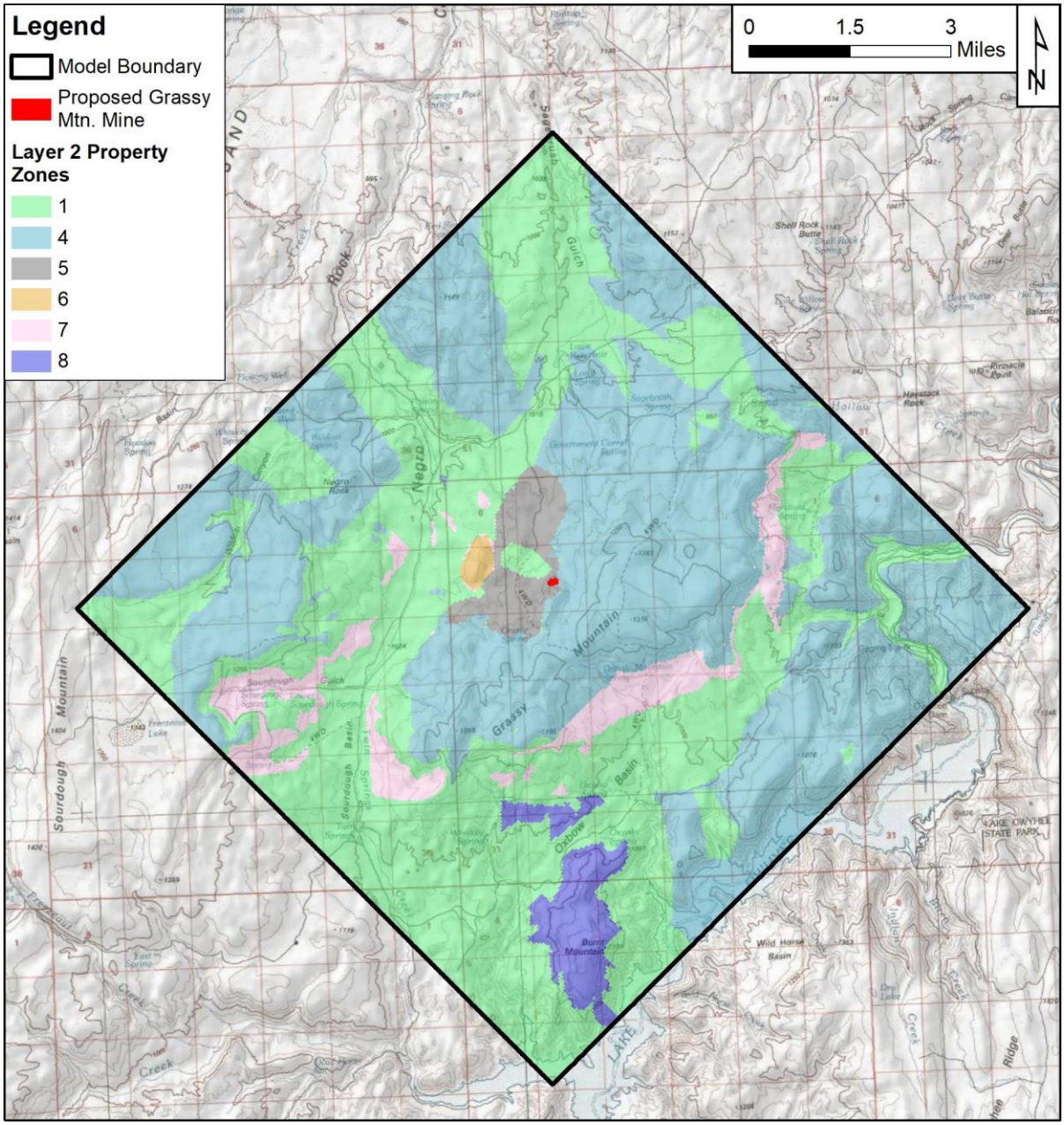

Figure 6. Layer 2 property zones

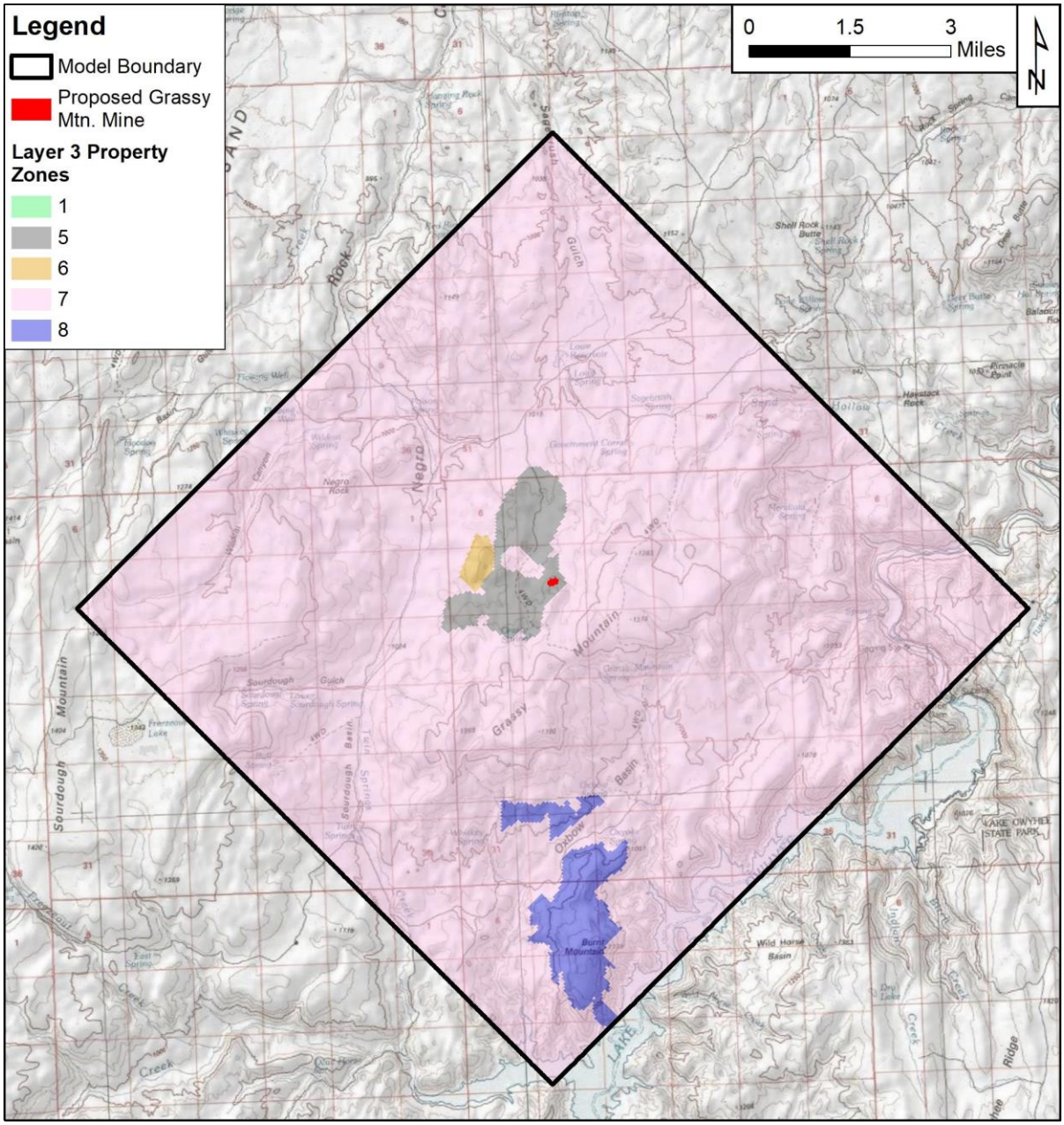

Figure 7. Layer 3 property zones

In general, surface geology was assigned to Layer 1, based on its relatively shallow thickness. Assignment and correlation of subsurface geology is complicated by the overall lack of information for most areas in the model and the high degree of heterogeneity (both laterally and vertically). Lithology types interpreted to be more resistant at the surface (i.e., rhyodacite dome, Kern Tuff, and some regions for basalt) were assumed to also be present

at greater depth and were extended into Layer 2 and Layer 3. However, the hydraulic conductivity assigned in the model to various zones was guided largely by the resulting match between model simulated and measured heads (discussed in the section on model calibration below).

5.4.2. Storage Parameters

For the transient model, storage parameters including specific storage, specific yield, and porosity were assigned to necessary property zones. The values were initially assigned in GV using results from pumping tests and representative values from literature (Domenico 1965). Values were adjusted during limited model calibration (see section 5.5) using manual adjustments and PEST to achieve an improved match between model simulated and measured heads. The storage values assigned to each zone are presented as Table 5. The same zones used for the hydraulic conductivity were used for the storage values (Figure 5, Figure 6, and Figure 7).

Table 5. Model storage values (dimensionless)

Zone	Description	Specific Storage	Specific Yield	Porosity
1	Basin deposits (siltstone, sandstone, unconsolidated)	2.62E-04	0.30	0.20
2	Alluvium (Qal, Qls)	5.00E-03	0.13	0.30
3	Siltstone, sandstone (Tis)	5.00E-03	0.30	0.20
4	Resistent topography and basalt	5.00E-05	0.05	0.08
5	Altered zones (within and near deposit)	5.00E-05	0.11	0.10
6	Rhyodacite dome	7.14E-05	0.08	0.08
7	Deeper deposits and Kern Tuff (Tkt)	1.74E-03	0.30	0.06
8	Higher topography region to south	3.35E-03	0.05	0.06

5.4.3. Recharge

Recharge was assigned to Layer 1 as zones to simulate infiltration that reaches the groundwater table (Figure 8). Conceptually, higher elevations are expected to receive higher rates of recharge compared to basins or areas of lower elevation typically associated with discharge regions. Therefore, a higher rate of recharge (0.45 in/yr) was assigned a portion of Grassy Mountain, Sourdough Mountain, and a higher elevation region to the south (shown in yellow in the figure). Recharge assignment was arbitrary as the locations/ delineation of separate recharge areas is not a known condition. Lower recharge (approximately 0.07 in/yr) was assigned elsewhere throughout the model based on balancing the water budget of the model with the observed total flow of springs. Recharge was not modified during the limited calibration process but was evaluated during limited sensitivity runs.

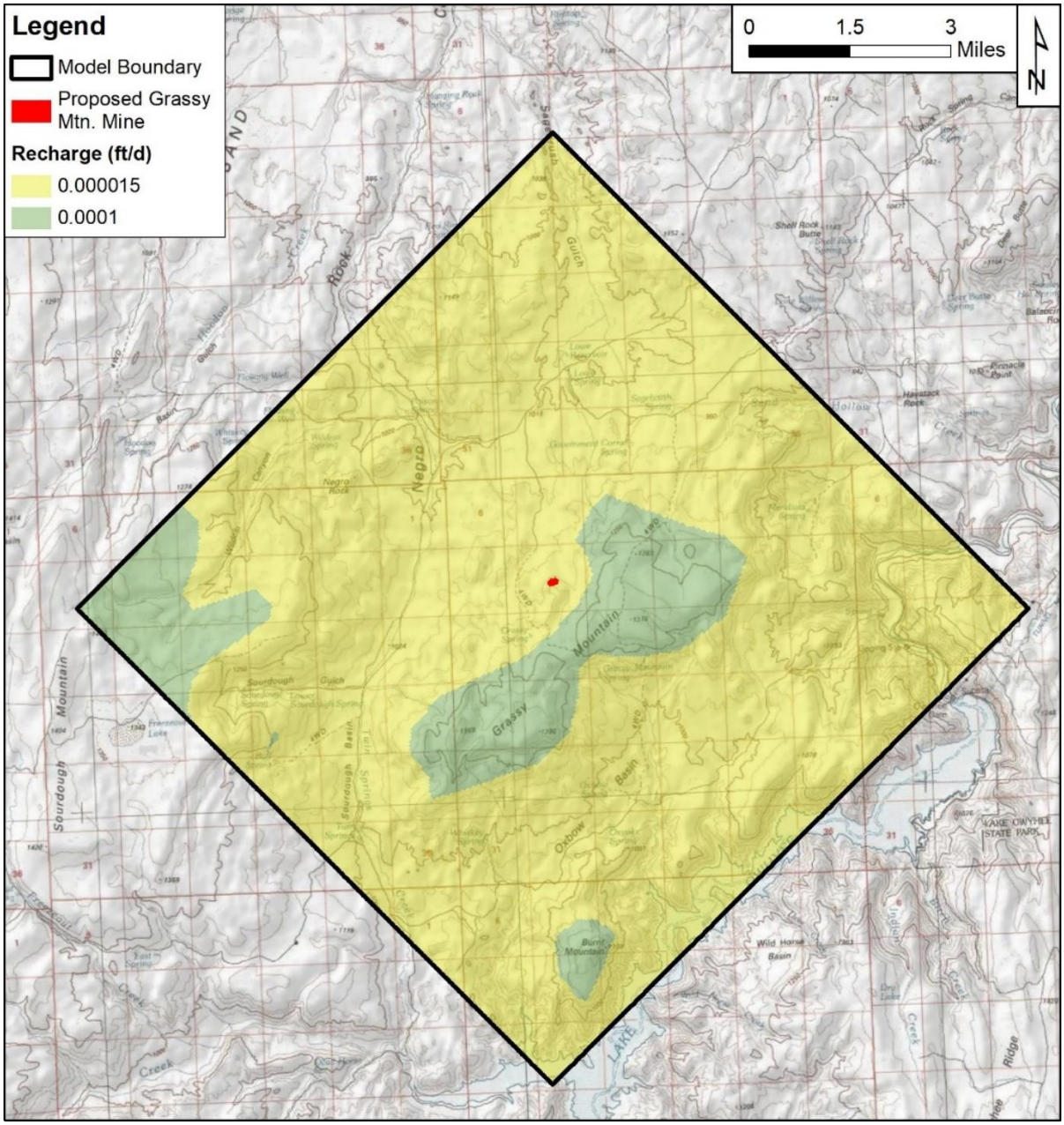

Figure 8. Model recharge distribution

5.5. Limited Calibration

Limited model calibration was performed using a combination of both manual and automated parameter estimation techniques. One method of calibration is to compare the degree to which the simulated groundwater heads agree with measured values. The model,

by necessity, is an oversimplification of actual conditions but is considered to be commensurate with its intended use for baseline level estimates of groundwater flow, water balance, dewatering rates, and drawdown associated with groundwater production.

Average potentiometric surface and groundwater elevations at individual wells in the shallow zone for 2016 conditions were used to guide the model development and limited calibration process. Overall, the potentiometric surface and hydraulic gradient in the vicinity of Grassy Mountain have remained relatively consistent with little variation over time based on monitoring in the shallow zone. Therefore, the use of average 2016 conditions is considered appropriate for modeling purposes. The model, as currently calibrated, does not reproduce the heads measured in the deep wells and VWP sensors.

Groundwater elevations were imported into the model as calibration targets based on the well coordinate, screen mid-point elevation, and measured groundwater elevation. Wells were assigned automatically in the model to the layer corresponding with the screen mid-point elevation. MODFLOW calibration targets are summarized in Appendix C. MODFLOW input and output files for the base case, sensitivity runs, PEST, and dewatering scenario are provided in Appendix D on a memory device.

5.5.1. Manual Calibration

Manual calibration involves changing one or more model parameters at a time, running the model, and assessing the results. The calibration process continues until a reasonable match between model simulated and measured (observed) heads and/or flux conditions is reached.

This process is inherently non-unique and is strongly determined by the model setup (i.e., parameter zonation and value assignment). For example, a given match to the observed heads could result from a particular set of hydraulic conductivity values at a given recharge rate. The same head match could result from a different set of hydraulic conductivity and recharge values. For this reason, both the observed groundwater heads, overall potentiometric surface, hydraulic gradients, and expected (order-of-magnitude) range in the overall water balance for the region were considered during the calibration process.

5.5.2. **Parameter Estimation (PEST)**

The parameter estimation software (PEST, Version 13.6) was used to optimize select model inputs including hydraulic conductivity near the proposed Grassy Mountain Mine (zones 1, 4, and 5) and drain conductance (all reaches) to improve the model's match to measured groundwater elevations near the resource for the steady state model. During the calibration of the transient model additional PEST calibrations were performed to calibrate all hydraulic

conductivity and storativity values. PEST is an optimization program based on nonlinear parameter estimation techniques[5], distributed by Watermark Numerical Computing (2010).

Model input parameters are selected for optimization by specifying a lower and upper bound for each parameter based on the expected, plausible range of values. For example, hydraulic conductivity may span several orders of magnitude, assigned with lower and upper ranges. PEST then adjusts parameters within the specified range through successive iterations to lower the total error (or objective function) in the model. The total error in the model is the sum of the residual errors (i.e., the difference between each simulated head versus the measured head at a given location) based on user-defined targets. PEST has been incorporated into the GV interface, and all PEST simulations were performed using GV.

5.6. Model Results

Overall, the model simulates groundwater flow on a regional scale that generally follows topography. Groundwater flow from the resource area is predominantly to the northwest within the hydraulic basin north of Grassy Mountain (Figure 9). The model also represents the general direction of groundwater flow and horizontal hydraulic gradient within the resource area in the shallow zone (Figure 10), based on comparison of 2016 groundwater contours to model simulated heads within Layer 2. Model simulated contours are shown in blue, overlain on the 2016 contours in red.

Layer 1 was predominantly dry in most areas of the model, attributed to the relatively thin layer, effects of boundary condition assignment in the model (particularly drains), and hydraulic conductivity values. For example, vertical hydraulic conductivity is not well represented in the model.

Layer 3 does not contain head calibration targets; therefore, the overall degree to which model heads represent actual conditions could not be evaluated. However, the model does not simulate the observed heads in the deep wells and VWP units.

[5] Gauss-Marquardt-Levenberg algorithm

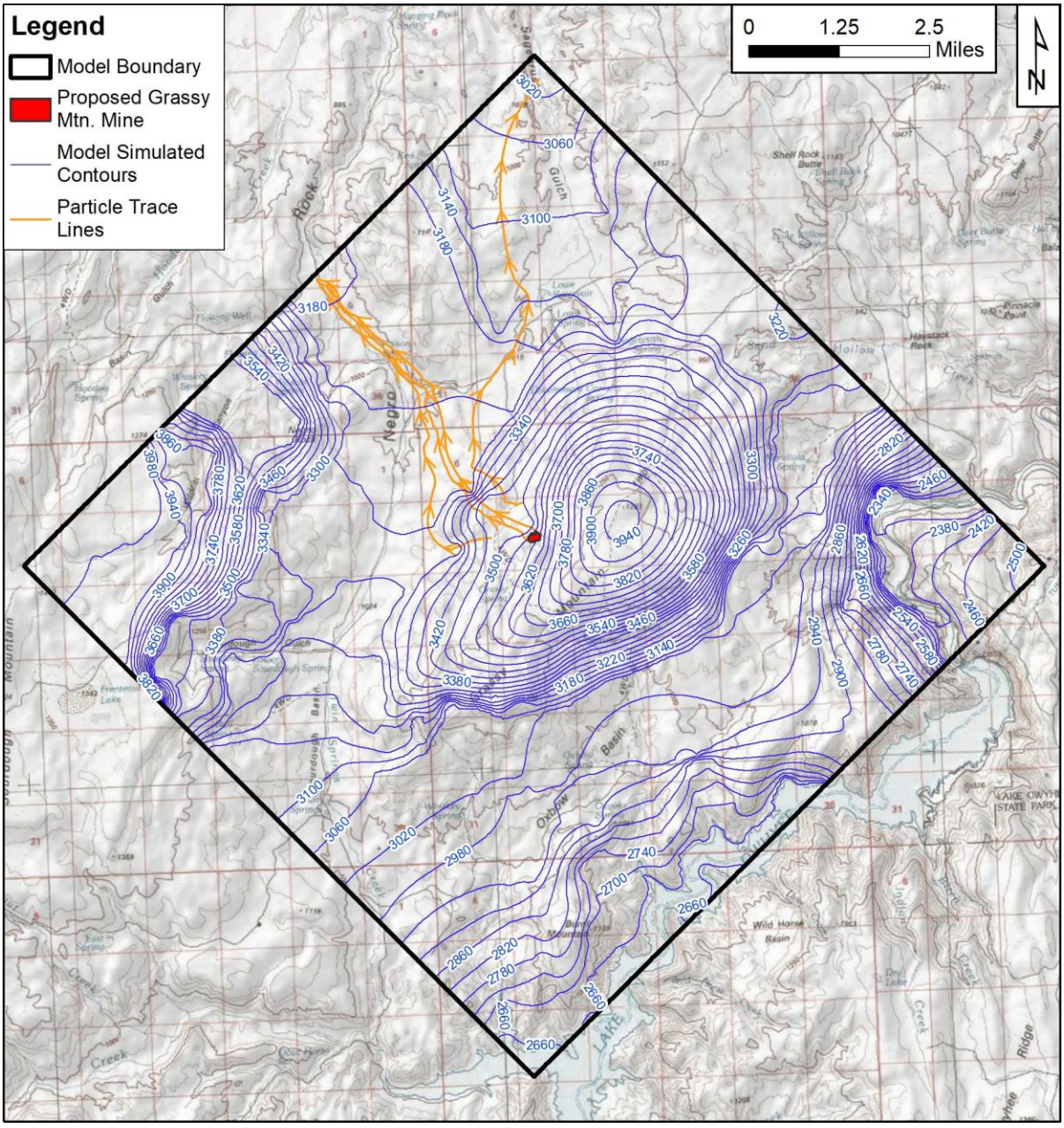

Figure 9. Model simulated groundwater contours (layer 2)

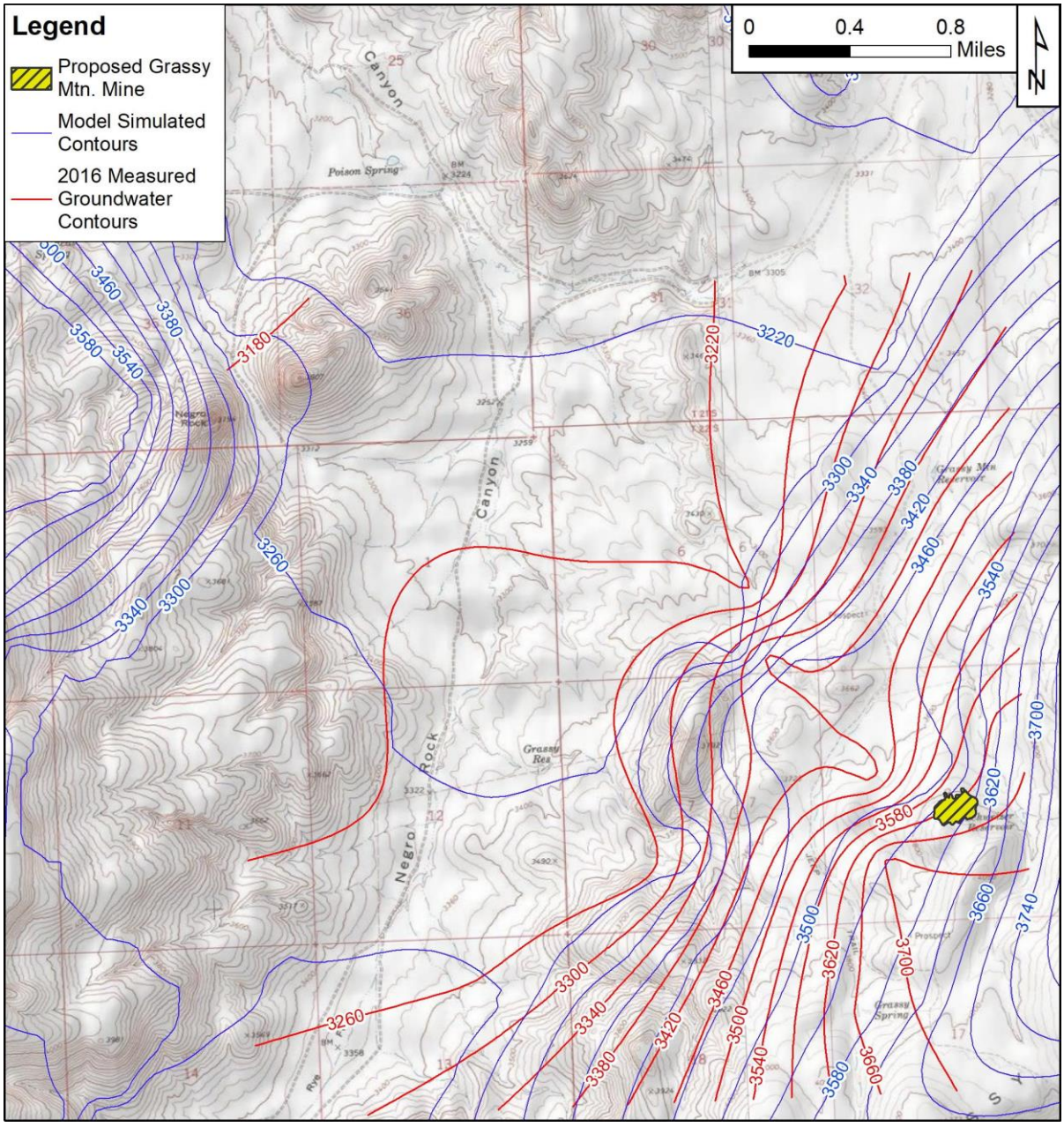

Figure 10. Modeled heads (layer 2) compared to 2016 contours

In general, the model typically simulated measured heads within +/- 45 feet, with some outliers with more or less associated error. The lowest error was less than one foot, and the highest error was 113 feet. The targets assigned to Layer 1 also contribute to the errors in the model. Posted residuals in

Figure 11 show the difference between model computed heads and measured heads for layer 1 and the residuals for layer 2 are presented in Figure 12. Residuals in blue indicate the model under-predicts measured heads, and the residuals in red indicate the model over-predicts heads.

Discrepancies between model simulated and measured heads are attributed to the combination of several, potential factors including the coarse layer resolution in Layer 2, heterogeneity effects not simulated in the model, hydraulic conductivity zonation, non-unique fit between model inputs including recharge and hydraulic conductivity, and representation of head targets in the model as a single point within a single layer. Model calibration statistics for both layers 1 and 2 are summarized in Table 6.

Table 6. Model simulated vs. measured heads

Residual Mean	11.99
Absolute Residual Mean	42.57
Residual Std. Deviation	50.91
Sum of Squares	65,659
RMS Error	52.30
Min. Residual	-74.32
Max. Residual	113.94
Number of Observations	24.00
Range in Observations	498.17
Scaled Residual Std. Deviation	0.10
Scaled Absolute Residual Mean	0.09
Scaled RMS Error	0.10
Scaled Residual Mean	0.02

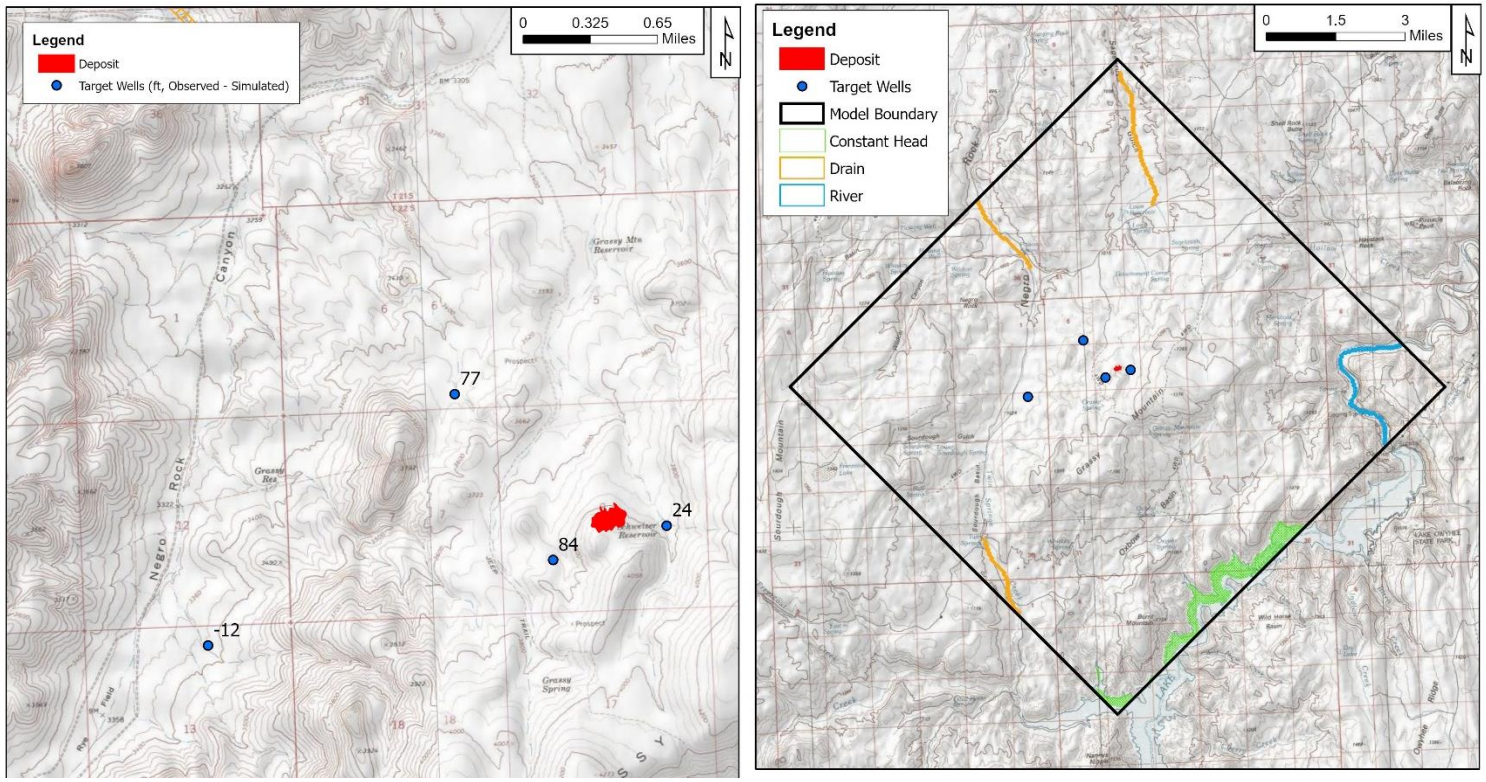

Figure 11. Model layer 1 residual head values (left) target well location (right).

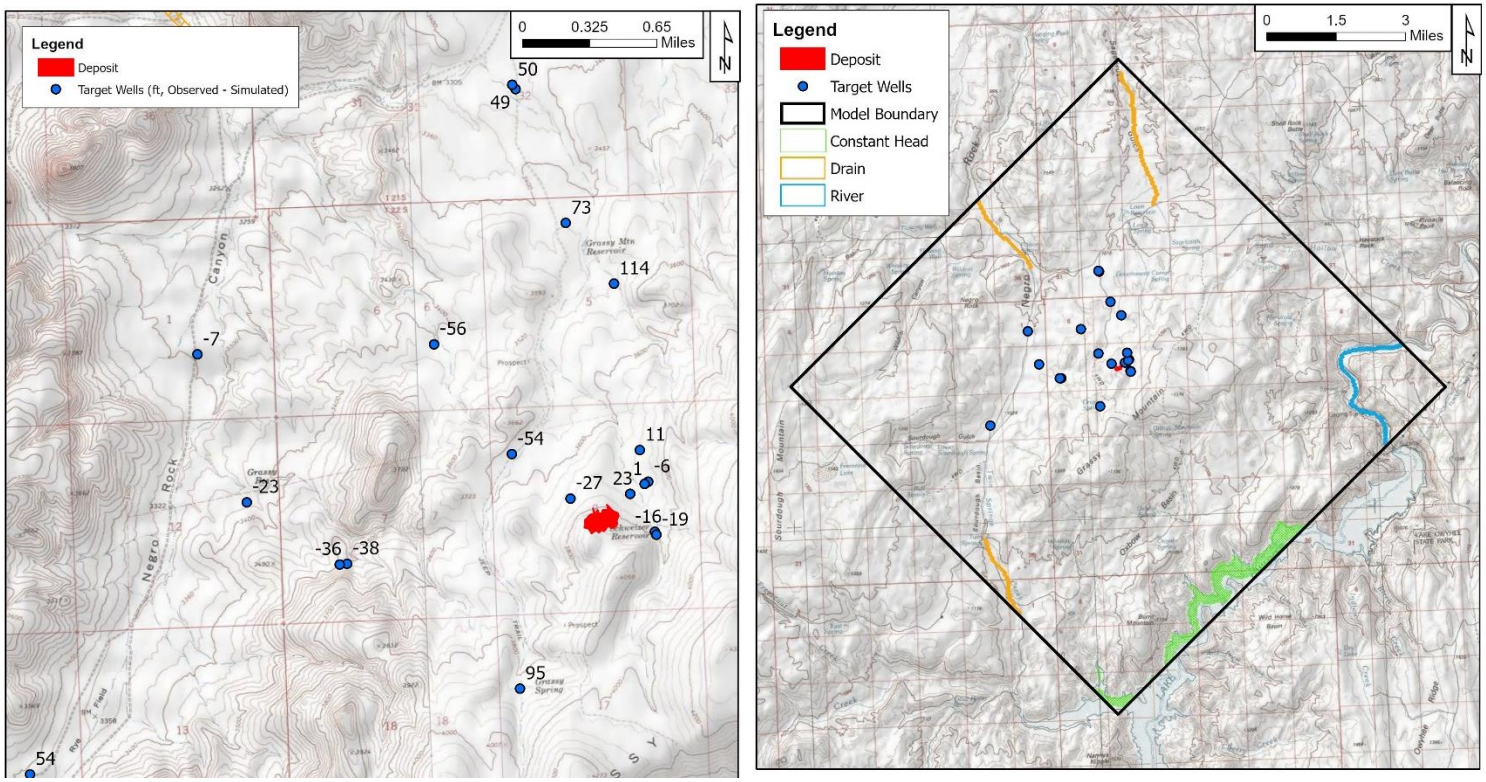

Figure 12. Model layer 2 residual head values(left) target well locations (right)

As with any model, there is room for improvement in the overall model calibration. The model might be improved through one or more of the following approaches:

- Use of a finite element model could potentially better represent the steep vertical gradients near the resource area and compartmentalization effects apparent in the groundwater elevation datasets.

- Additional discretization (horizontal zones and/or vertical layers) and anisotropy could be incorporated to allow more variation in assigned aquifer properties and greater control on changing values in the model to match observed conditions (i.e., individual well responses).

- Geostatistical methods could be evaluated to populate aquifer parameters such as hydraulic conductivity in areas of the model where limited information exists. These methods also could be used to potentially obtain a better match in areas where information does exist but the model is not at a resolution/calibrated to simulate the observed conditions. For example, use of the PEST automatic parameter estimation technique coupled with a geostatistical 'pilot points' approach based on kriging[6] could allow assignment of hydraulic conductivity that is not tied to property zones. Currently, hydraulic conductivity is assigned in the model based on inferred zones expected to have similar properties.

The model calculated volumes for inflow (recharge and river leakage) and outflow (constant head, drains, and river leakage) are summarized in Table 7 below. Recharge represents the greatest inflow into the model, with minor river leakage effects. Groundwater exits the model through constant head cells assigned to the Owyhee Reservoir, drain cells assigned to select spring features, and, to a lesser extent, through river cells assigned to the Owyhee River. The overall error in the water balance in the model is -0.01 percent. An acceptable error balance is typically regarded as less than 0.1 percent (Anderson and Woessner, 1992).

[6] Pilot points are assigned by the user at specific locations in the model based on the level of available information on hydraulic properties. The parameter estimation process uses a regularized inversion numerical approach to obtain the best fit to the solution such as observed or measured heads (Doherty and Hunt, 2010).

Table 7. Model water budget

Parameter	Inflow (ft^3/day)	Inflow (gpm)	Outflow (ft^3/day)	Outflow (gpm)
Storage	0	0	0	0
Constant Head	0	0	38865.47	201.9115
Wells	0	0	0	0
Drains	0	0	22725.53	118.0623
River Leakage	3232.565	16.79362	12872.29	66.87331
Recharge	71221.4	370.0051	0	0
Total	74453.97	386.7987	74463.29	386.8471
% Discrepancy	0.01			

5.7. Sensitivity Analysis

A limited sensitivity analysis was performed by varying hydraulic conductivity and recharge from the base model case. The purpose of the sensitivity assessment was to bracket the model predictions within a reasonable range of model input values. This analysis was used prior to transient calibration and the base target statistics are slightly different than values presented above. This evaluation was intended to provide some additional context for the model predictions.

Four, separate scenarios were evaluated:

- Sensitivity Run 1 – Hydraulic conductivity for all zones was increased by 2x. This run resulted in model simulated heads under-predicting measured heads at all locations.

- Sensitivity Run 2 – Hydraulic conductivity for all zones was decreased by 2x. This run resulted in model simulated heads over-predicting measured heads at nearly all locations.

- Sensitivity Run 3 – Recharge was increased by 2x. This run resulted in model simulated heads over-predicting measured heads at all locations.

- Sensitivity Run 4 – Recharge was decreased by 2x. This run resulted in model simulated heads under-predicting measured heads at all locations.

The overall direction of groundwater flow is similar for all cases; however, the magnitude of the model errors is considerably greater compared to the base case model (Table 8).

Table 8. Summary of sensitivity analysis

Statistic	Base Model	Sensitivity Run 1	Sensitivity Run 2	Sensitivity Run 3	Sensitivity Run 4
		2x greater hydraulic conductivity	2x lower hydraulic conductivity	2x higher recharge	2x lower recharge
Residual Mean	10.98	170.35	-249.03	-234.12	173.41
Absolute Residual Mean	45.83	176.96	278.72	260.13	180.01
Residual Std. Deviation	53.93	130.82	271.55	251.15	133.64
Sum of Squares	72,696	1,107,174	3,258,175	2,829,320	1,150,329
RMS Error	55.04	214.78	368.45	343.35	218.93
Min. Residual	-78.98	-74.42	-686.52	-648.67	-74.42
Max. Residual	113.94	406.12	113.94	113.94	412.36
Number of Observations	24	24	24	24	24
Range in Observations	498	498	498	498	498
Scaled Residual Std. Deviation	0.11	0.26	0.55	0.50	0.27
Scaled Absolute Residual Mean	0.09	0.36	0.56	0.52	0.36
Scaled RMS Error	0.11	0.43	0.74	0.69	0.44
Scaled Residual Mean	0.02	0.34	-0.50	-0.47	0.35

These results support the general order-of-magnitude values for hydraulic conductivity and recharge rates used in the base model case. Sensitivity model files are included in Appendix D.

5.8. Dewatering Scenario

5.8.1. Steady State Dewatering

Dewatering was simulated in the model by including pumping wells around the perimeter of the proposed Grassy Mountain Mine (**Error! Reference source not found.**). Four wells (numbered D-1 through D-4) with an extraction rate of 5 gpm each (20 gpm total) were simulated in Layer 2 to represent steady-state (i.e., non-time varying) pumping conditions. Wells are simulated as fully-penetrating, extending through the entire thickness of Layer 2. In reality, dewatering would be performed using wells that are not likely to be completed through the entire vertical section required for dewatering. In that case, additional vertical flow components would be expected to result in additional drawdown beyond that predicted for the fully penetrating well, with only horizontal flow effects simulated.

The model simulates depressing the water table to approximately 2,950 feet to 3,100 feet within the resource footprint, below the approximate target elevation of 3,100 feet, with all four wells pumping simultaneously. The cells in purple in Figure 13are dewatered (i.e., the head calculated in the model is below this layer).

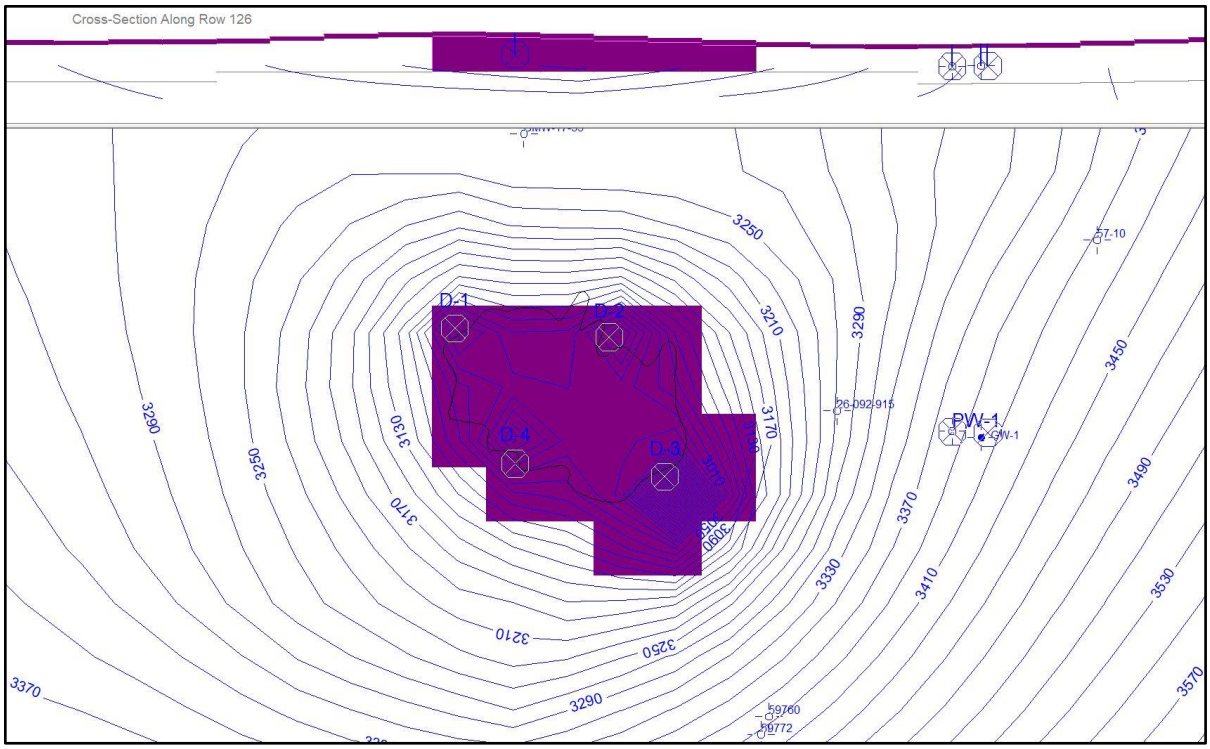

Figure 13. Dewatering simulation

5.8.2. Transient Dewatering

The same dewatering flows from the four dewatering wells was simulated in the transient model. The transient model predicted it would take thousands of years for the mine to be dewatered at a total pumping rate of 20 gpm. The transient model was then set up to pump for 10 years total with higher flows for 70 days and relatively lower flow for the remaining 10 years. An additional dewatering well was added to the center of the proposed Grassy Mountain Mine. The flows and a plot of predicted water levels from each dewatering well used to dewater the mine are presented below in Table 9 and Figure 14. A map of the wells, the area of dewatering (indicated by purple cells), and water level contours is provided below as Figure 15.

Table 9. Transient model simulated dewatering well flows

Dewatering Well	First 70 Days Flow (gpm)	Remaining 10 Years Flow (gpm)
D-1	80	15
D-2	80	10
D-3	120	7.5
D-4	120	15
D-5	80	10
Combined Flow	480	57.5

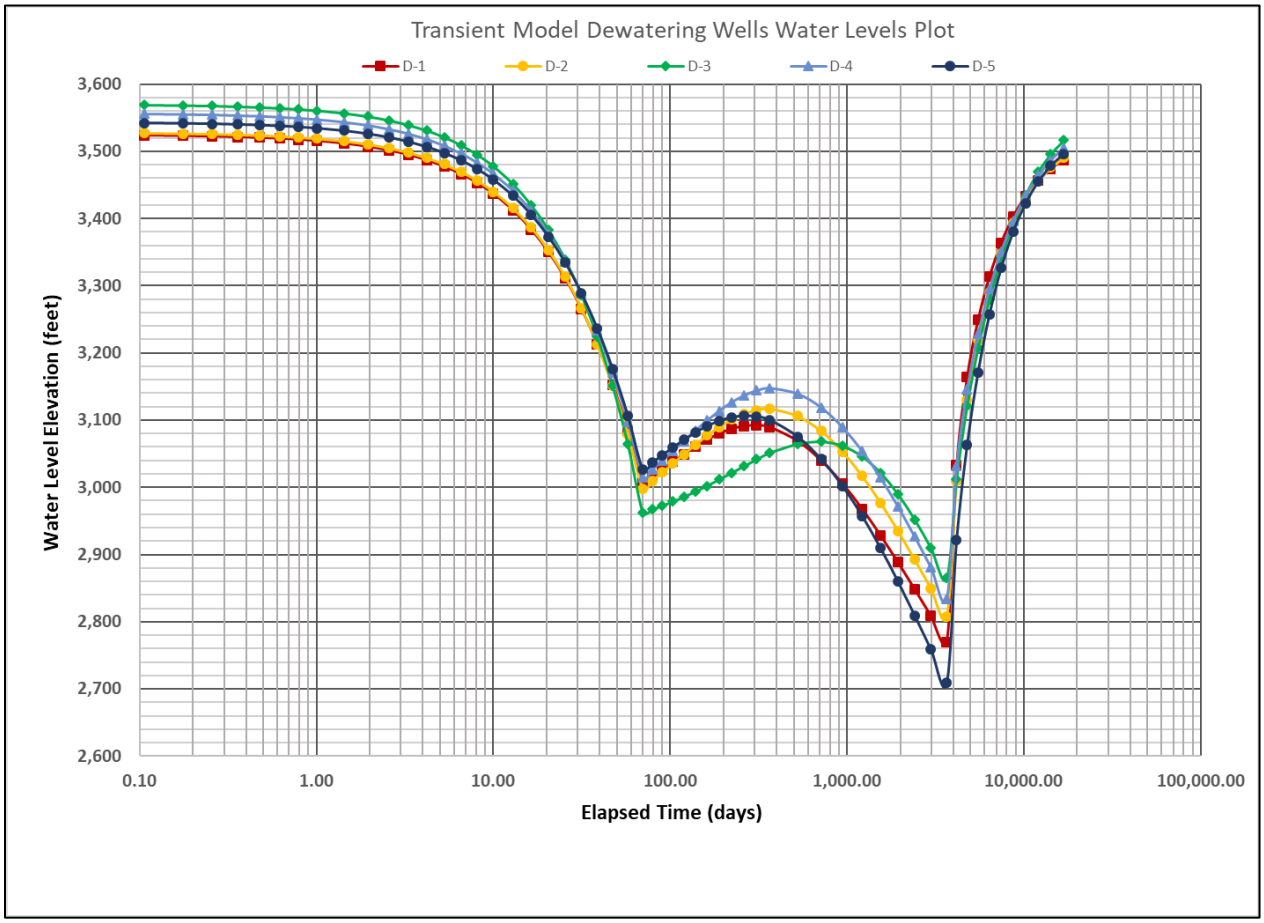

Figure 14. Transient model dewatering wells water levels plot

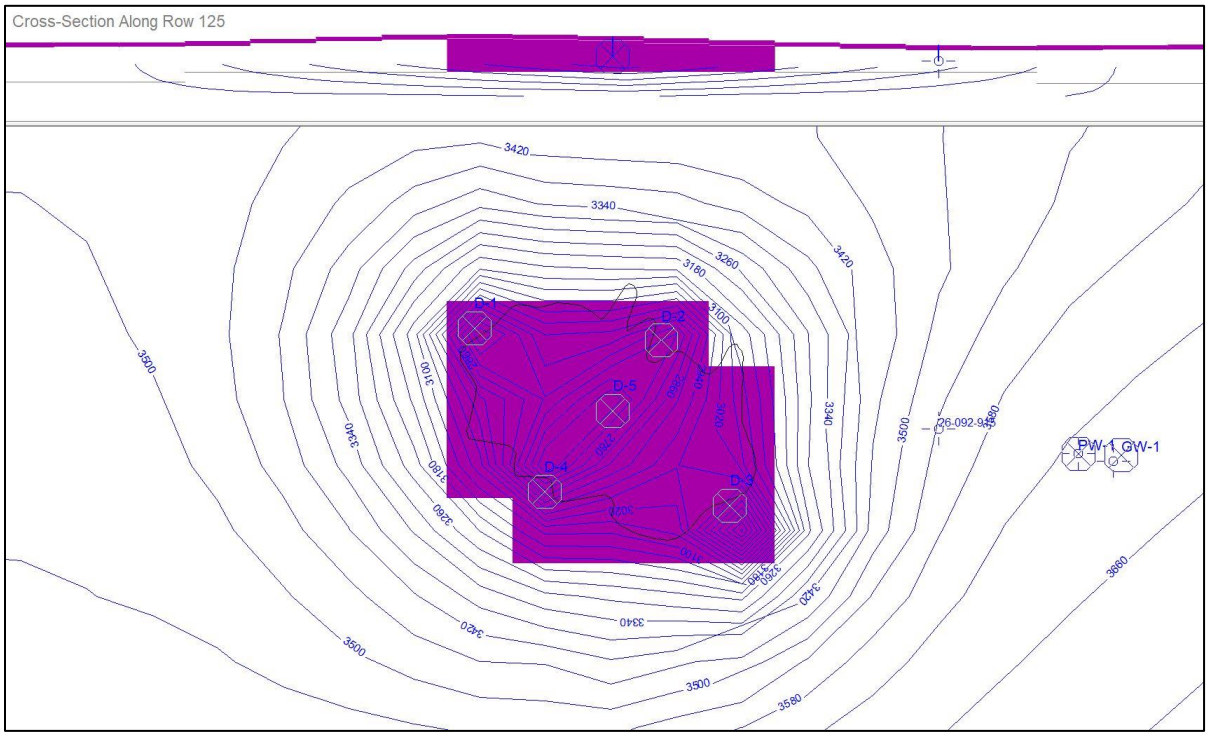

Figure 15. Transient model dewatering wells and water level contours (10 yrs)

5.8.3. Other Factors Influencing Dewatering

The data collected from monitoring wells, vibrating wire piezometers, and other bores drilled in and near the proposed Grassy Mountain Mine demonstrate that the groundwater flow in this highly faulted and silicified zone is highly restricted, and water levels are relatively deeper than in wells completed further from the mine. In some of the silicified zone, the aquifer is unable to produce any water. This numerical model, calibrated to the shallower and more consistent surrounding well water levels, is meant to show a maximum amount of dewatering possible. It is likely, where water is encountered in the deeper zones of the proposed Grassy Mountain Mine, that the lower flows (57.5 gpm) modeled to keep the water levels down after the first 70 days of pumping will be more than adequate for dewatering. Due to the compartmentalized nature of the aquifer surrounding the mine, it is possible larger flows of water may be initially encountered for short periods (days or weeks).

5.9. Groundwater Production for Mine Operations Scenario

5.9.1. Transient Modeling Results

Production well pumping was modeled simultaneously with the transient model dewatering pumping as described above for a 10-year period to predict drawdown effects on the aquifer system. The model simulated production wells 3,4, and 5 (mapped on Figure 1) pumping 106.67 gpm each for a total of 320 gpm. The drawdown from the dewatering and production wells pumping is mapped in Figure 16. After ten years of pumping, the model predicts a little over 2 feet of drawdown at Lowe Spring and zero drawdown at Poison Spring.

The model was designed to run a total of 368,650 days, approximately 1,000 years after pumping ceases to model recovery. After ten years of pumping, when the wells cease pumping, the area of impact continues to migrate outward due the slow equilibration of the cone of depression. After approximately 10,000 days of recovery the model predicts a residual drawdown of over 20 feet near the production wells, approximately 10 feet of drawdown at Lowe Spring, and less than 0.5 feet of drawdown at Poison Spring. A plot of residual drawdown remaining after approximately 10,000 days of recovery is presented as Figure 17.

Plots of drawdown at the production wells and springs (Lowe Spring and Poison Spring) are provided as Figure 18 and Figure 19, respectively. The maximum drawdown in the production wells is 212 feet after ten years in Well 5. Lowe Spring was affected the most by the cone of depression with the water levels in layer 1 drawing down approximately 2 feet until that layer was dry, and layer 2 drawing down at most 11 feet.

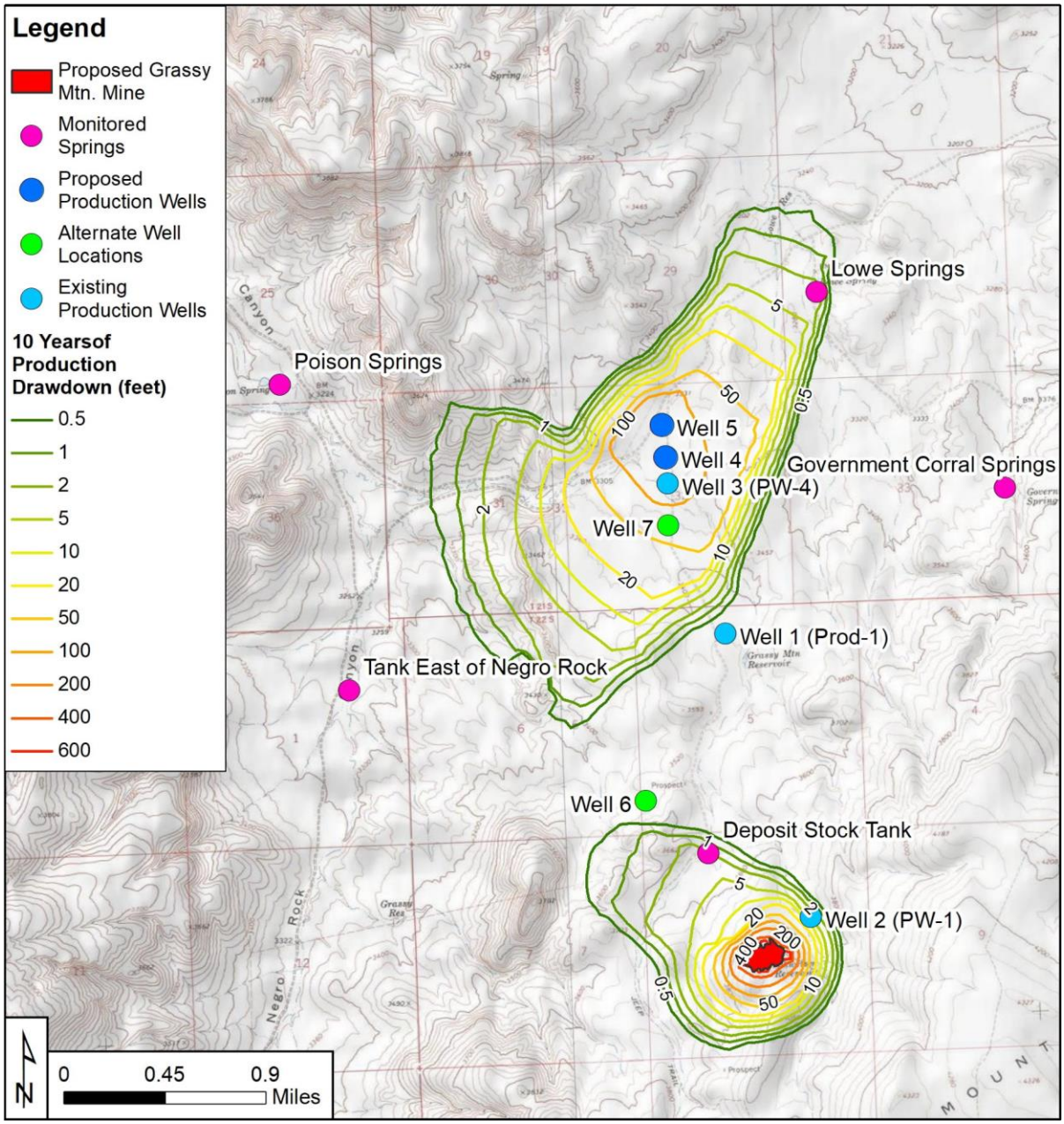

Figure 16. Drawdown after ten years of dewatering and production well pumping

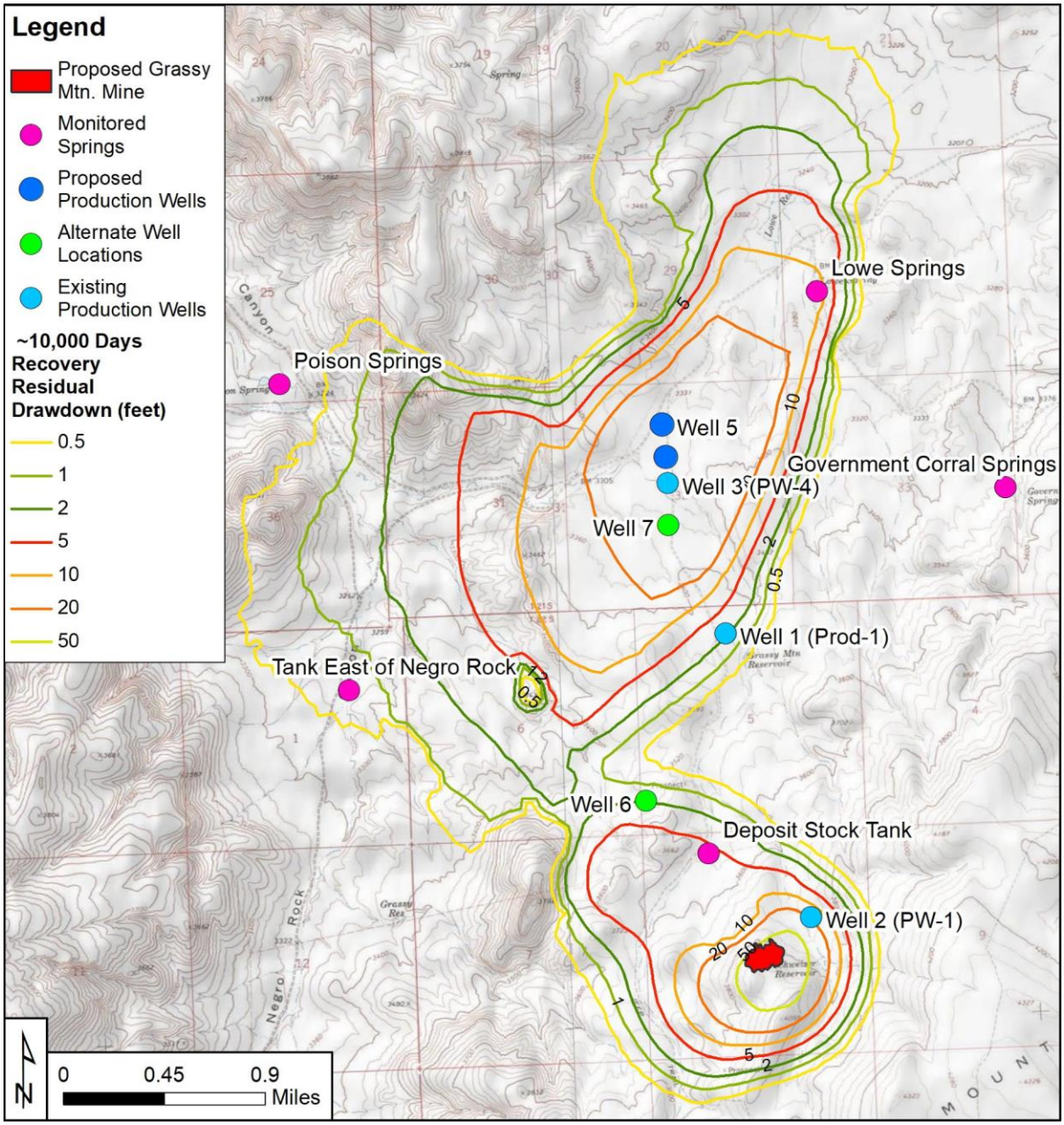

Figure 17. Residual drawdown after approximately 10,000 days of recovery

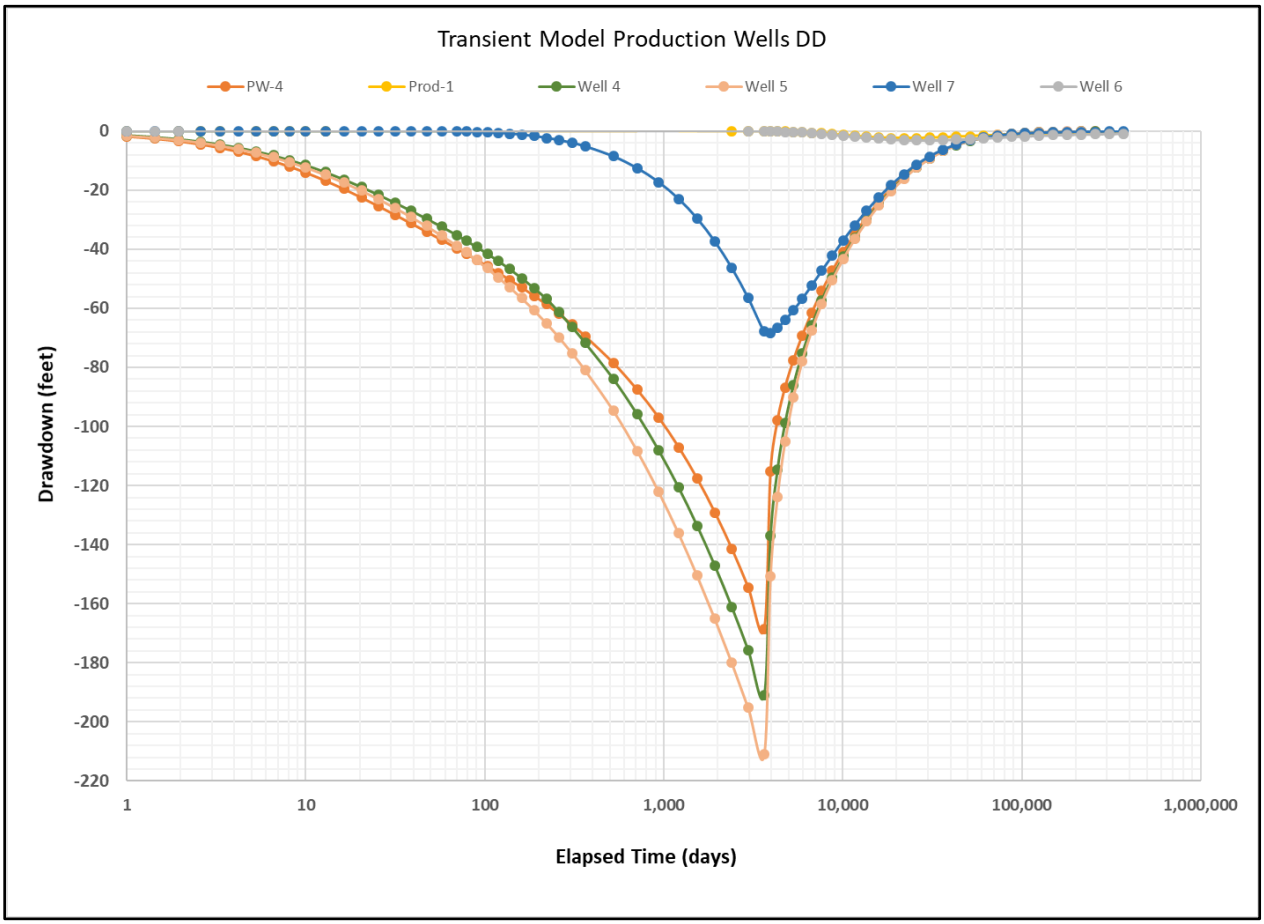

Figure 18. Transient model production wells drawdown prediction

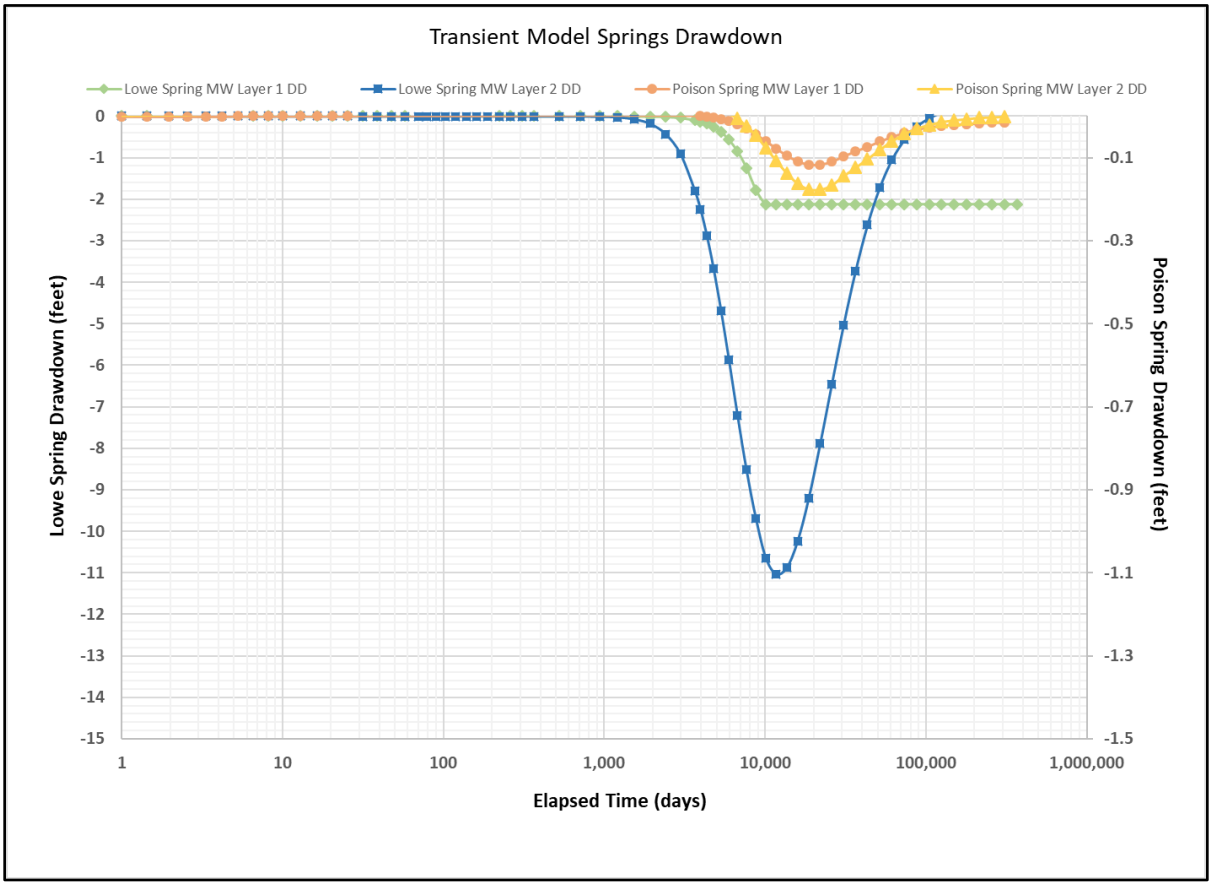

Figure 19. Transient Model Springs Drawdown Prediction

5.9.2. Other Factors Affecting Aquifer Drawdown

A transient model was used to predict aquifer drawdown and associated impact to springs. However, there are other factors to consider when attempting to predict impacts to springs, including source water characteristics (i.e. geochemistry), geology, and elevation differences.

A piper diagram, which includes the sampled wells and springs near the proposed production well area, is presented below as Figure 20. Due to the geochemical signature of Lowe Spring (more Ca-HCO3) being different from PW-4 (Na/K-HCO3), and because the location of Lowe Spring is near the contact between the different geological units (SPF 2021c), it is anticipated there may be less hydraulic connection between the production wells and the source of Lowe Spring; therefore, the modeled drawdown is probably conservative. Using similar reasoning, Poison Spring is more likely to be affected by the production well pumping because Poison Spring has a similar geochemical signature as PW-4; thus the model might under predicts impacts to Poison Spring.

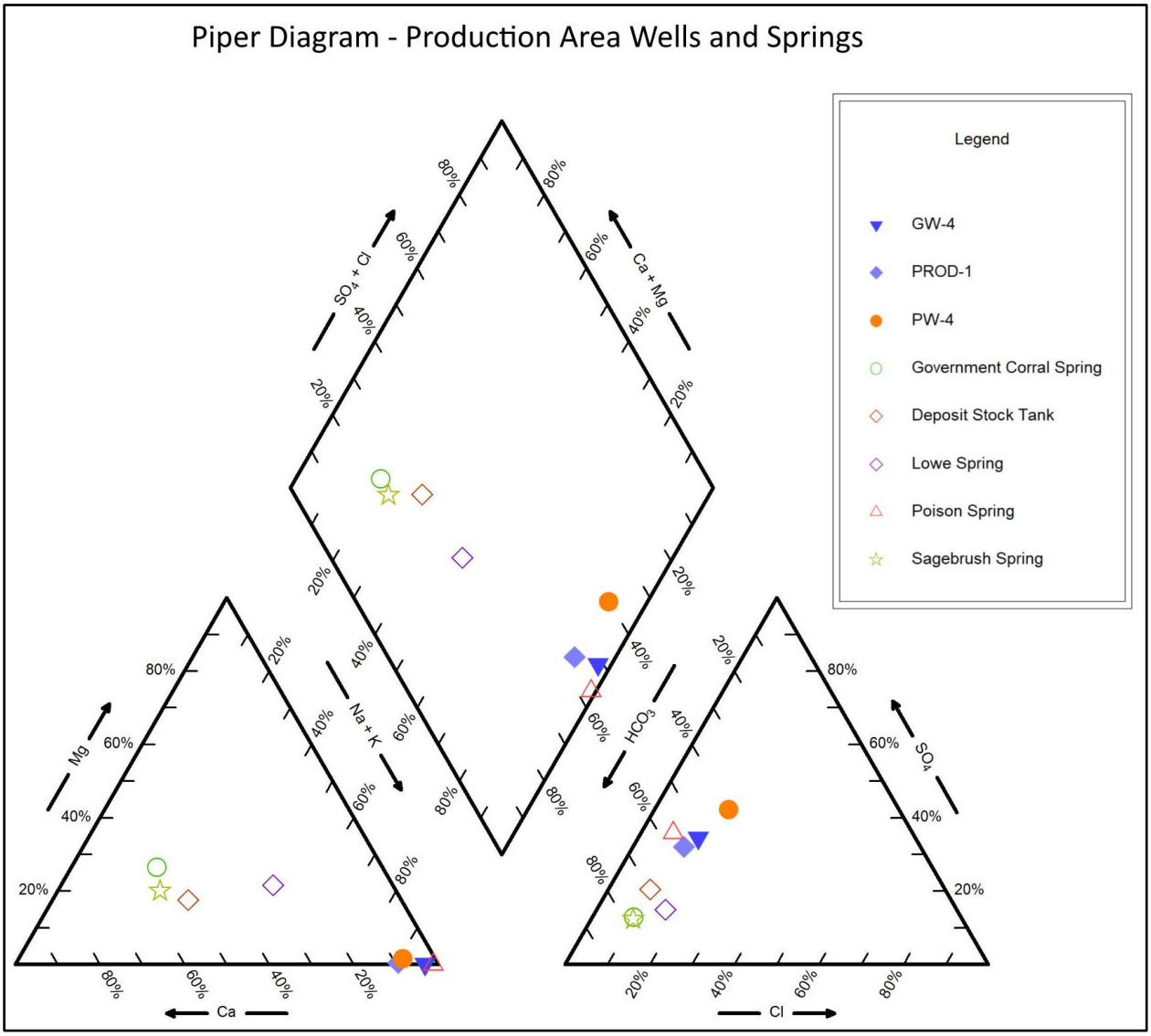

Figure 20. Piper Diagram Including Production Area Wells and Springs

Poison Spring and Lowe Spring are both presumed to be downgradient of PW-4. The water level elevation in PW-4 is approximately 3,261 feet amsl, while the elevation of Poison Spring is 3,213 and Lowe Spring is at 3,279. Lowe Spring, although located down gradient of PW-4, has a higher elevation than the water level in PW-4 further supporting that Lowe Spring has a different source than PW-4. The elevation of Poison Spring is consistent with its location downgradient of PW-4, suggesting a higher likelihood of a connection.

6. RESULTS AND CONCLUSIONS

The following points summarize the results and conclusions from this investigation:

1. The conceptual model for groundwater flow at Grassy Mountain provides the basis for preliminary dewatering estimates. The current conceptual model suggests a single aquifer system as a function of scale, supported by the relatively uniform, shallow and deep potentiometric surface (on a regional scale) and correlation with groundwater elevation and depth. On a local scale, heterogeneity effects are apparent, attributed to local variations in hydraulic properties, facies changes, and/or the occurrence of faults/fault zones.

2. Preliminary estimated analytical steady-state bulk dewatering rates on the order of 20 gpm, with the potential to intercept up to 500 gpm on a short-duration basis (i.e., days to weeks), are anticipated based on the analytical approach.

    a. The low-end estimate reflects lower permeability in the range of $1x10^{-6}$ cm/s (or 0.003 ft/d) anticipated directly within the resource area. Due to the expression of individual faults or fault zones, the actual permeability varies spatially and overall may be more or less. SPF is not aware of direct testing of hydraulic conductivity or transmissivity based on aquifer pumping tests within the resource area to date to confirm this estimate. However, the results of pumping tests performed around the perimeter of the resource extent support an aggregate lower hydraulic conductivity within this magnitude due to limited yields and negative boundary conditions.

    b. The high-end estimate reflects higher hydraulic conductivity that may be more representative of basin conditions (i.e., unconsolidated and consolidated sedimentary deposits) and short-duration inflows into the resource area (i.e., faults and fractures serving as conduits for flow) that could potentially be intercepted during the mining activities. The anticipated hydraulic conductivity may be on the order of $1x10^{-4}$ cm/s (0.3 ft/d). This condition may arise from contributions from local zones of higher permeability that are effectively dewatered in early time. As the cone of depression or radius of influence extends from the theoretical pumping well(s) with time, the overall aquifer properties are expected to produce less water due to overall lower permeability effects.

3. The dewatering evaluation also examined potential groundwater inflow rates using transient analytical methods.

a. The transient analytical (Theis) method was used to estimate the predicted dewatering rate of approximately 250 gpm to 600 gpm, assuming a single pumping well scenario, placed at the center of the proposed Grassy Mountain Mine. Note that these values greatly exceed the estimated recharge rate for the immediate vicinity of the mine.
b. The theoretical drawdown effects at the perimeter of the proposed Grassy Mountain Mine were evaluated after one year of continuous pumping to produce 600 feet of drawdown (assuming an initial groundwater elevation of 3,700 feet for upgradient conditions and an assumed dewatering elevation of 3,100 feet). The higher flow rate range is consistent with anticipated short-duration inflow amounts over the span of days to weeks.

4. A three-dimensional numerical groundwater flow model was developed and executed using MODFLOW to evaluate potential dewatering rates under steady-state and transient conditions.

    a. The model was constructed at a 10 mile x 10 mile resolution, centered on the proposed Grassy Mountain Mine, with three layers. Regional and local groundwater flow conditions were simulated based on a distribution of hydraulic conductivity and storativity (informed by geologic mapping and the results of aquifer pumping tests), recharge from surface infiltration predominantly in higher elevation regions, and assignment of boundary conditions to reflect physical boundaries to the extent possible (including Owyhee Reservoir, Owyhee River, and select spring features).

    b. The steady state model dewatering was simulated by placing wells along the proposed Grassy Mountain Mine perimeter and assigning uniform pumping rates to achieve dewatering to the 3,100-foot elevation. Four wells were simulated at 5 gpm each for 20 gpm total pumping requirements under steady-state conditions, resulting in a pumping level elevation of approximately 2,950 feet to 3,100 feet.

    c. The transient model dewatering was simulated by placing four wells around the perimeter and one well in the center of the proposed Grassy Mountain Mine and pumping a total 480 gpm for 70 days and 57.5 gpm for the remaining lifetime of the mine (approximately 10 years). The higher rate pumping for 70 days was able to lower water level elevations to less than 3,050 feet and the lower rate pumping initially allowed minor recovery then lowered the water levels to a range of elevations from 2,700 to 2,870 feet.

    d. The three-dimensional numerical model was created as a regional model for a baseline analysis of dewatering requirements. This model was

calibrated using the regional water levels. The deeper water levels located near the proposed mine and other highly silicified and compartmentalized areas are not represented in the model. The conceptual model report (SPF 2021b) discusses these deeper water levels and potential causes. Currently, there are no wells or piezometers completed in the highly silicified region encompassing the deposit area that have a static water level higher than 3,200 feet amsl. Drillers have indicated flows of up to 10 gpm in only 3 of the exploratory bores drilled in the proposed mine at depths shallower than 3,200 feet amsl. Only two of the exploratory bores in the proposed mine had a reported static water level shallower than 3,200 feet amsl. Due to its silicified and compartmentalized nature, the amount of water that flows through the proposed mine area is limited. The three-dimensional numerical dewatering model does not account for this limitation and should be used as a worst case estimate for the maximum flow that would be required to dewater the proposed mine in its entirety.

e. The planned mining method is drift-and-fill. This method used in the compartmentalized aquifer located at the proposed Grassy Mountain Mine will decrease the total volume of material requiring dewatering.

5. The transient model was also used to evaluate the drawdown effects of the dewatering wells and the mine operation production wells on the aquifer and nearby springs. Lowe Spring is approximately 1 mile away from the nearest proposed pumping well (Well 5) and had a predicted maximum drawdown of approximately 12 feet. Approximately 1.75 miles away, Poison Spring has a maximum predicted drawdown less 0.5 feet. The water sampled from Poison Spring has a similar geochemical characteristic as PW-4, while Lowe Spring shows a more volcanic geochemical signature. The geochemical signatures indicated Poison Spring may be affected by the groundwater production more than modeled and Lowe Spring may be affected less than modeled.

6. The dewatering and drawdown estimates reflect inherent uncertainty, both in the available datasets and necessary simplifying assumptions for representing a complex system. Therefore, these results are considered appropriate for baseline-level planning.

7. The accuracy of representing predominant groundwater flow paths and estimates of potential groundwater inflow depends on the sufficiency and accuracy of supporting data and assumptions. This process is inherently uncertain with respect to the conceptual model, translation of the conceptual to analytical and numerical models, and interpretation of results. Simplifying assumptions are necessary throughout this process.

The level of accuracy is considered appropriate for a preliminary baseline estimate. Overall, the magnitude of dewatering estimates generated during this investigation on the order of 20 to 100 gpm for long-duration pumping, and up to 500 gpm for shorter-duration pumping (days to weeks) are within the range of previous investigations that used different methods.

7. SUPPLEMENTAL REPORT

In March of 2020, Lorax Environmental Services Ltd. submitted a report on mine dewatering in support of the Grassy Mountain Gold and Silver Project Feasibility Study (Lorax Environmental 2020). Mine dewatering was estimated by using the same numerical model parameters as the model presented in this report, but with updates as follows:

- Utilized a finite element groundwater flow model with six layers
- Incorporated more detailed mine plans
- Established hydraulic conductivity values in the three-dimensional model space using 2019 resistivity survey data; calibration included using 2019 packer test data
- Included a structural feature (may be construed as a fault acting as a flow conduit) that resulted in more reliable model calibration

With these updates, the groundwater inflow rates were predicted to range from 12 gpm to 78 gpm, which is consistent with the long-term flow rates (after initial dewatering) estimated by this report (57 gpm). The updated dewatering assessment is included Appendix E.

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Appendix A
Steady State Analytical Dewatering Calculations

Scenario 1: Shallow aquifer (Zone 1) dewatering estimate - Low K; High Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W \pi (r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	4.03E-10	distributed recharge flux	0.5	ABC (1992) model (0.25 - 1.0 in/yr) Assume average 0.5 in/yr
K_h	m/s	1.0E-08	horizontal hydraulic conductivity within Zone 1	1.E-06	Estimated K (low end) of 10^{-6} cm/s
r_0	m	785	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	7.56E-04	inflow from the pit walls		Calculated
Q_1	gpm	12	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
780	175
785	177
790	178

Scenario 1a: Shallow aquifer (Zone 1) dewatering estimate - Low K; Mid Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	2.01E-10	distributed recharge flux	0.25	ABC (1992) model (0.25 - 1.0 in/yr) Assume mid value 0.25 in/yr
K_h	m/s	1.0E-08	horizontal hydraulic conductivity within Zone 1	1.E-06	Estimated K (low end) of 10^{-6} cm/s
r_0	m	1015	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	6.40E-04	inflow from the pit walls		Calculated
Q_1	gpm	10	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
1010	176
1015	177
1025	179

Scenario 1b: Shallow aquifer (Zone 1) dewatering estimate - Low K; Low Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W \pi (r_o^2 - r_p^2)$$

model input
calculated value
result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	5.64E-11	distributed recharge flux	0.07	ABC (1992) model (0.25 - 1.0 in/yr) Assume low 0.07 in/yr
K_h	m/s	1.0E-08	horizontal hydraulic conductivity within Zone 1	1.E-06	Estimated K (low end) of 10^{-6} cm/s
r_0	m	1670	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	4.91E-04	inflow from the pit walls		Calculated
Q_1	gpm	8	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
1600	168
1670	177
1700	181

Scenario 2: Shallow aquifer (Zone 1) dewatering estimate - Mid K; High Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W \pi (r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	4.03E-10	distributed recharge flux	0.5	ABC (1992) model (0.25 - 1.0 in/yr) Assume average 0.5 in/yr
K_h	m/s	1.0E-07	horizontal hydraulic conductivity within Zone 1	1.E-05	Estimated K (mid range) of 10^{-5} cm/s
r_0	m	1910	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	4.59E-03	inflow from the pit walls		Calculated
Q_1	gpm	73	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
1900	176
1910	177
1925	179

Scenario 2a: Shallow aquifer (Zone 1) dewatering estimate - Mid K; Mid Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	2.01E-10	distributed recharge flux	0.25	ABC (1992) model (0.25 - 1.0 in/yr) Assumes mid value 0.25 in/yr
K_h	m/s	1.0E-07	horizontal hydraulic conductivity within Zone 1	1.E-05	Estimated K (mid range) of 10^{-5} cm/s
r_0	m	2540	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	4.07E-03	inflow from the pit walls		Calculated
Q_1	gpm	64	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
2525	176
2540	177
2550	178

Scenario 2b: Shallow aquifer (Zone 1) dewatering estimate - Mid K; Low Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	5.64E-11	distributed recharge flux	0.07	ABC (1992) model (0.25 - 1.0 in/yr) Assume low 0.07 in/yr
K_h	m/s	1.0E-07	horizontal hydraulic conductivity within Zone 1	1.E-05	Estimated K (mid range) of 10^{-5} cm/s
r_0	m	4340	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	3.33E-03	inflow from the pit walls		Calculated
Q_1	gpm	53	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
4300	175
4340	177
4400	180

Scenario 3: Shallow aquifer (Zone 1) dewatering estimate - High K; High Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	4.03E-10	distributed recharge flux	0.5	ABC (1992) model (0.25 - 1.0 in/yr) Assume average 0.5 in/yr
K_h	m/s	1.0E-06	horizontal hydraulic conductivity within Zone 1	1.E-04	Prod 1 estimated K (high end) of 10^{-4} cm/s
r_0	m	5000	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	3.16E-02	inflow from the pit walls		Calculated
Q_1	gpm	501	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
4950	175
5000	177
5030	178

Scenario 3a: Shallow aquifer (Zone 1) dewatering estimate - High K; Mid Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W \pi (r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	2.01E-10	distributed recharge flux	0.25	ABC (1992) model (0.25 - 1.0 in/yr) Assume average 0.25 in/yr
K_h	m/s	1.0E-06	horizontal hydraulic conductivity within Zone 1	1.E-04	Prod 1 estimated K (high end) of 10^{-4} cm/s
r_0	m	6750	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	2.88E-02	inflow from the pit walls		Calculated
Q_1	gpm	457	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
6500	169
6750	177
6800	178

Scenario 3b: Shallow aquifer (Zone 1) dewatering estimate - High K; Low Rch

$$(1)\ h_o = \sqrt{h_p^2 + \frac{W}{K_{h1}}\left[r_o^2 \ln\left(\frac{r_o}{r_p}\right) - \frac{(r_o^2 - r_p^2)}{2}\right]}$$

$$(2)\ Q_1 = W\,\pi\,(r_o^2 - r_p^2)$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
W	m/s	5.64E-11	distributed recharge flux	0.07	ABC (1992) model (0.25 - 1.0 in/yr) Assume low 0.07 in/yr
K_h	m/s	1.0E-06	horizontal hydraulic conductivity within Zone 1	1.E-04	Prod 1 estimated K (high end) of 10^{-4} cm/s
r_0	m	11850	radius of influence (cone of depression maximum extent)		Iteration
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water level in pit of 3680 ft Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_1	m^3/s	2.49E-02	inflow from the pit walls		Calculated
Q_1	gpm	394	inflow from the pit walls		Convert m^3/s to gpm

Iteration (r_0)	Gives (h_0)
11500	171
11850	177
12000	180

Scenarios 1-3: Deep aquifer (Zone 2) dewatering estimate - Low K

$$Q_2 = 4\, r_p \left(\frac{K_{h2}}{m_2}\right)(h_o - d)$$

$$m_2 = \sqrt{\frac{K_{h2}}{K_{v2}}}$$

	model input
	calculated value
	result

Source: Marinelli and Niccoli, 2000

Parameter	Units	Value	Description	Value	Source
K_{h2}	m/s	1.0E-08	horizontal hydraulic conductivity within Zone 2	1.E-06	Assumes low K (1e-6 cm/s range)
K_{v2}	m/s	--	vertical hydraulic conductivity within Zone 2		Assumed
m_2	--	1	anisotropy parameter		Assumed
d	m	1.E-04	depth of pit lake	0.0001	100% dewatered pit; assume negligible
r_p	m	137	effective pit radius	900	Assumes mined extent of 900 feet
h_0	m	177	initial (premining) saturated thickness above the base of zone 1	580	Assumes high water elevation in pit of 3680 ft to match upgradient contour Assumes pit base (Zone 1 bottom) is 3100 ft
h_p	m	1.E-04	saturated thickness above the base of zone 1 at r_p	0.0001	100% dewatered pit; assume negligible
Q_2	m^3/s	9.70E-04	pit inflow rate from zone 2 (through pit bottom)		Calculated
Q_2	gpm	15	pit inflow rate from zone 2 (through pit bottom)		Convert m^3/s to gpm

Appendix B
Theis Calculations

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

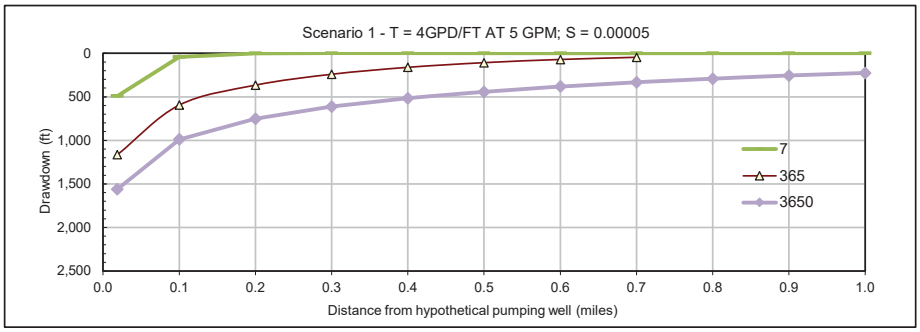
Assumed Parameter Values

Q=	6	(gpm)
T=	4	(gpd/ft)
S=	0.00005	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	188.58	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!
2.0	2880	289.30	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.0	10080	490.83	42.40	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	21600	618.82	111.38	10.24	0.49	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30.0	43200	736.64	198.65	47.22	7.38	0.88	0.07	0.00	0.00	0.00	0.00	0.00
60.0	86400	855.12	300.57	111.38	39.17	10.24	2.47	0.49	0.08	0.01	0.00	0.00
90.0	129600	924.60	364.32	160.19	70.51	25.95	9.17	2.88	0.80	0.19	0.04	0.01
120.0	172800	973.94	410.76	198.65	98.61	47.22	18.64	7.38	2.67	0.88	0.26	0.07
180.0	259200	1043.53	477.41	256.96	145.30	81.46	44.33	20.37	9.69	4.35	1.83	0.72
245.0	352800	1096.46	528.78	303.75	185.35	113.69	68.71	40.52	20.37	10.81	5.50	2.67
365.0	525600	1164.94	595.82	366.52	241.62	161.97	108.39	71.75	46.73	26.66	16.16	9.52
730.0	1051200	1284.03	713.45	479.70	347.76	259.02	194.92	147.02	110.62	82.80	61.51	45.30
1095.0	1576800	1353.71	782.64	547.38	413.00	321.00	252.95	200.56	159.31	126.44	100.07	78.88
1460.0	2102400	1403.16	831.84	595.82	460.21	366.52	296.41	241.62	197.70	161.97	132.62	108.39
1825.0	2628000	1441.51	870.04	633.57	497.21	402.51	331.12	274.83	229.24	191.67	160.37	134.11
3650.0	5256000	1560.65	988.89	751.50	613.63	516.85	442.85	383.45	334.29	292.77	257.17	226.33

Chart Data

Distance (miles)	Days	Time 7	120	180	245	365	730	1095	1460	1825	3650
0.0		491	974	1044	1096	1165	1284	1354	1403	1442	1561
0.1		42	411	477	529	596	713	783	832	870	989
0.2		0.63	198.65	256.96	303.75	366.52	479.70	547.38	595.82	633.57	751.50
0.3		0.00	98.61	145.30	185.35	241.62	347.76	413.00	460.21	497.21	613.63
0.4		0.00	47.22	81.46	113.69	161.97	259.02	321.00	366.52	402.51	516.85
0.5		0.00	18.64	44.33	68.71	108.39	194.92	252.95	296.41	331.12	442.85
0.6		0.00	7.38	20.37	40.52	71.75	147.02	200.56	241.62	274.83	383.45
0.7		0.00	2.67	9.69	20.37	46.73	110.62	159.31	197.70	229.24	334.29
0.8		0.00	0.88	4.35	10.81	26.66	82.80	126.44	161.97	191.67	292.77
0.9		0.00	0.26	1.83	5.50	16.16	61.51	100.07	132.62	160.37	257.17
1.0		0.00	0.07	0.72	2.67	9.52	45.30	78.88	108.39	134.11	226.33



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

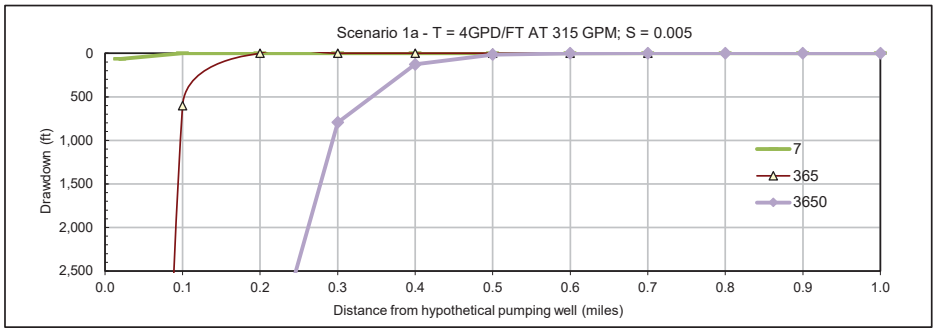
Assumed Parameter Values

Q=	380	(gpm)
T=	4	(gpd/ft)
S=	0.005	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
7.0	10080	66.66	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
15.0	21600	856.58	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
30.0	43200	3511.91	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
60.0	86400	7840.39	0.01	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!
90.0	129600	11047.18	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!
120.0	172800	13546.81	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	259200	17308.56	45.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.0	352800	20310.30	169.26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
365.0	525600	24322.04	603.21	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
730.0	1051200	31527.96	2868.90	48.90	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1095.0	1576800	35827.60	4995.73	251.29	4.86	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1460.0	2102400	38902.03	6864.76	603.21	27.12	0.53	0.00	0.00	0.00	0.00	0.00	0.00
1825.0	2628000	41296.78	8493.68	1053.05	78.99	3.10	0.06	0.00	0.00	0.00	0.00	0.00
3650.0	5256000	48773.69	14334.05	3961.82	793.99	128.74	15.18	1.28	0.08	0.00	0.00	0.00

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		67	13547	17309	20310	24322	31528	35828	38902	41297	48774
0.1		0.00	4	46	169	603	2869	4996	6865	8494	14334
0.2		0.00	0.00	0.00	0.01	0.53	49	251	603	1053	3962
0.3		#NUM!	0.00	0.00	0.00	0.00	0.18	4.86	27	79	794
0.4		#NUM!	0.00	0.00	0.00	0.00	0.00	0.03	0.53	3.10	128.74
0.5		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	15.18
0.6		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
0.7		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
0.8		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.9		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.0		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

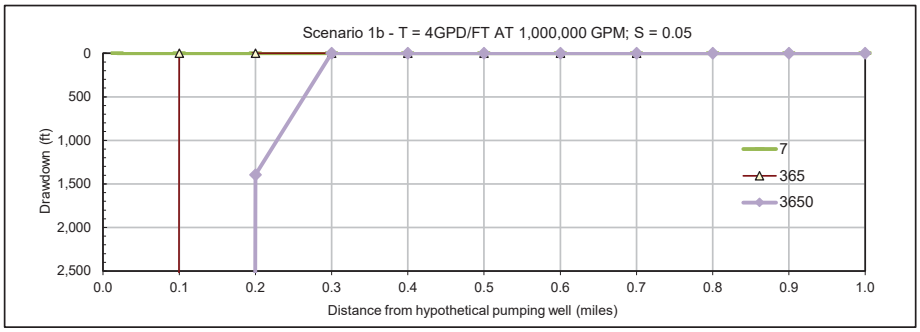
Assumed Parameter Values

Q=	1,000,000	(gpm)
T=	4	(gpd/ft)
S=	0.05	(dimensionless)

		Radius (ft)										
Time (days)	Time (minutes)	100	528	1,056	1,584	2,112	2,640	3,168	3,696	4,224	4,752	5,280
1.00	1440	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
7.0	10080	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
15.0	21600	0.06	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
30.0	43200	631.29	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
60.0	86400	83679.15	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
90.0	129600	486325.69	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
120.0	172800	1242829.92	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
180.0	259200	3421567.40	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
245.0	352800	6792422.36	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
365.0	525600	12013320.91	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
730.0	1051200	24577952.05	160.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!
1095.0	1576800	33510165.15	6067.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1460.0	2102400	40357525.68	39956.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1825.0	2628000	45896216.95	#######	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3650.0	5256000	64005377.33	#######	1394.97	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Chart Data

Distance (miles)	Time Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		0	######	3421567	######	######	#######	######	#######	######	######
0.1		#NUM!	0	0	0	0	160	6067	39956	128673	######
0.2		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	1394.97
0.3		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
0.4		#NUM!	#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.5		#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00	0.00	0.00
0.6		#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00	0.00
0.7		#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00	0.00
0.8		#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00	0.00
0.9		#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00
1.0		#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	0.00	0.00	0.00	0.00



Assumptions
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Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

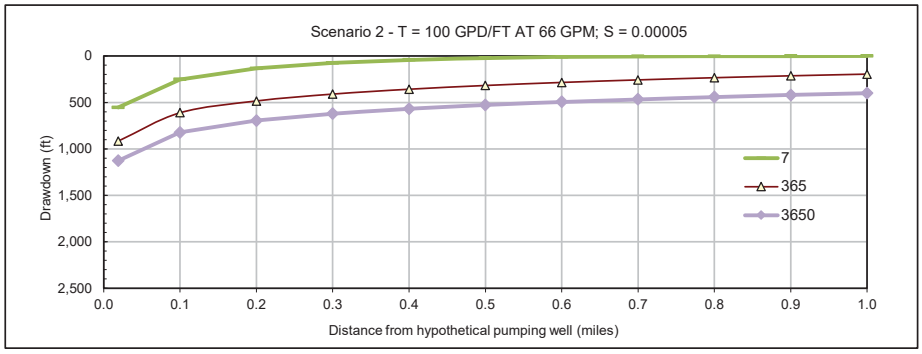
Assumed Parameter Values

Q=	80	(gpm)
T=	100	(gpd/ft)
S=	0.00005	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	376.30	92.77	16.90	2.22	0.19	0.01	0.00	0.00	0.00	0.00	0.00
2.0	2880	439.42	145.47	49.02	13.50	3.25	0.63	0.10	0.01	0.00	0.00	0.00
7.0	10080	553.97	252.13	134.82	75.64	42.01	22.61	10.22	4.79	2.11	0.87	0.34
15.0	21600	623.78	320.21	197.79	130.98	88.25	59.40	39.58	25.97	14.98	9.17	5.46
30.0	43200	687.29	382.96	258.23	187.76	140.29	105.95	80.21	60.61	45.57	34.02	25.19
60.0	86400	750.83	446.11	320.21	247.82	197.79	160.30	130.98	107.44	88.25	72.47	59.40
90.0	129600	788.00	483.15	356.85	283.82	232.90	194.30	163.67	138.65	117.84	100.32	85.44
120.0	172800	814.37	509.46	382.96	309.61	258.23	219.07	187.76	161.97	140.29	121.83	105.95
180.0	259200	851.54	546.57	419.87	346.19	294.36	254.62	222.62	196.03	173.45	154.00	137.05
245.0	352800	879.80	574.80	448.00	374.14	322.07	282.02	249.64	222.62	199.55	179.55	162.00
365.0	525600	916.35	611.32	484.42	410.40	358.10	317.77	285.05	257.63	234.11	213.59	195.48
730.0	1051200	979.90	674.83	547.83	473.65	421.13	380.51	347.44	319.59	295.59	274.55	255.84
1095.0	1576800	1017.07	711.99	584.96	510.73	458.13	417.41	384.22	356.23	332.08	310.85	291.94
1460.0	2102400	1043.44	738.36	611.32	537.05	484.42	443.65	410.40	382.34	358.10	336.78	317.77
1825.0	2628000	1063.90	758.82	631.76	557.48	504.82	464.02	430.74	402.64	378.35	356.98	337.91
3650.0	5256000	1127.45	822.36	695.28	620.97	568.26	527.41	494.05	465.87	441.48	420.00	400.80

Chart Data

Distance (miles)	Days / Time	7	120	180	245	365	730	1095	1460	1825	3650
0.0		553.97	814.37	851.54	879.80	916.35	979.90	1017.07	1043.44	######	1127.45
0.1		252.13	509.46	546.57	574.80	611.32	674.83	711.99	738.36	758.82	822.36
0.2		134.82	382.96	419.87	448.00	484.42	547.83	584.96	611.32	631.76	695.28
0.3		75.64	309.61	346.19	374.14	410.40	473.65	510.73	537.05	557.48	620.97
0.4		42.01	258.23	294.36	322.07	358.10	421.13	458.13	484.42	504.82	568.26
0.5		22.61	219.07	254.62	282.02	317.77	380.51	417.41	443.65	464.02	527.41
0.6		10.22	187.76	222.62	249.64	285.05	347.44	384.22	410.40	430.74	494.05
0.7		4.79	161.97	196.03	222.62	257.63	319.59	356.23	382.34	402.64	465.87
0.8		2.11	140.29	173.45	199.55	234.11	295.59	332.08	358.10	378.35	441.48
0.9		0.87	121.83	154.00	179.55	213.59	274.55	310.85	336.78	356.98	420.00
1.0		0.34	105.95	137.05	162.00	195.48	255.84	291.94	317.77	337.91	400.80



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

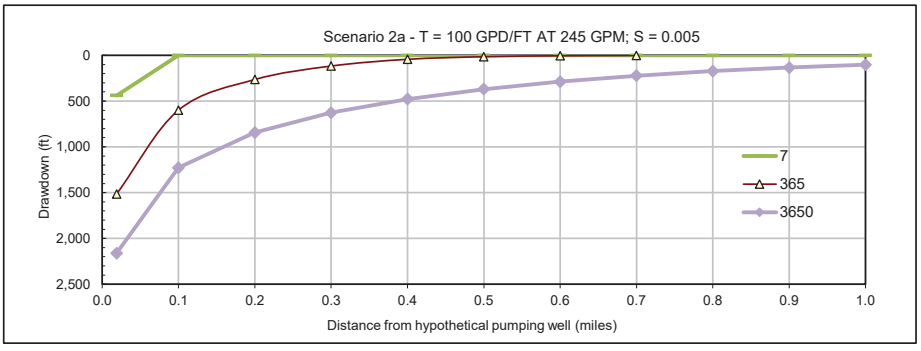
Assumed Parameter Values

Q=	245	(gpm)
T=	100	(gpd/ft)
S=	0.005	(dimensionless)

			Radius (ft)									
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	68.77	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	168.80	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!
7.0	10080	439.45	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	21600	634.38	16.73	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	43200	820.44	77.13	1.43	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	86400	1010.73	181.92	16.73	0.80	0.02	0.00	0.00	0.00	0.00	0.00	0.00
90.0	129600	1123.13	261.65	42.39	4.70	0.31	0.01	0.00	0.00	0.00	0.00	0.00
120.0	172800	1203.17	324.46	77.13	12.05	1.43	0.11	0.01	0.00	0.00	0.00	0.00
180.0	259200	1316.29	419.70	133.06	33.27	7.10	1.18	0.15	0.01	0.00	0.00	0.00
245.0	352800	1402.46	496.13	185.69	66.18	17.66	4.37	0.89	0.15	0.02	0.00	0.00
365.0	525600	1514.04	598.66	264.55	117.20	43.55	15.56	4.95	1.39	0.34	0.07	0.01
730.0	1051200	1708.29	783.51	423.06	240.13	135.23	73.99	34.27	16.43	7.43	3.16	1.26
1095.0	1576800	1822.02	894.06	524.30	327.58	206.52	128.84	78.77	41.82	23.34	12.54	6.48
1460.0	2102400	1902.73	973.18	598.66	394.64	264.55	177.04	117.20	76.33	43.55	26.39	15.56
1825.0	2628000	1965.35	1034.84	657.43	448.89	313.06	219.05	152.44	104.97	71.29	42.50	27.16
3650.0	5256000	2159.89	1227.46	844.19	626.30	478.18	369.67	287.11	223.03	172.80	133.27	102.17

Chart Data

Distance (miles)	Days / Time	7	120	180	245	365	730	1095	1460	1825	3650
0.0		439.45	1203.17	1316.29	1402.46	1514.04	1708.29	1822.02	1902.73	######	2159.89
0.1		1.03	324.46	419.70	496.13	598.66	783.51	894.06	973.18	######	1227.46
0.2		0.00	77.13	133.06	185.69	264.55	423.06	524.30	598.66	657.43	844.19
0.3		0.00	12.05	33.27	66.18	117.20	240.13	327.58	394.64	448.89	626.30
0.4		0.00	1.43	7.10	17.66	43.55	135.23	206.52	264.55	313.06	478.18
0.5		0.00	0.11	1.18	4.37	15.56	73.99	128.84	177.04	219.05	369.67
0.6		0.00	0.01	0.15	0.89	4.95	34.27	78.77	117.20	152.44	287.11
0.7		0.00	0.00	0.01	0.15	1.39	16.43	41.82	76.33	104.97	223.03
0.8		0.00	0.00	0.00	0.02	0.34	7.43	23.34	43.55	71.29	172.80
0.9		0.00	0.00	0.00	0.00	0.07	3.16	12.54	26.39	42.50	133.27
1.0		0.00	0.00	0.00	0.00	0.01	1.26	6.48	15.56	27.16	102.17



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

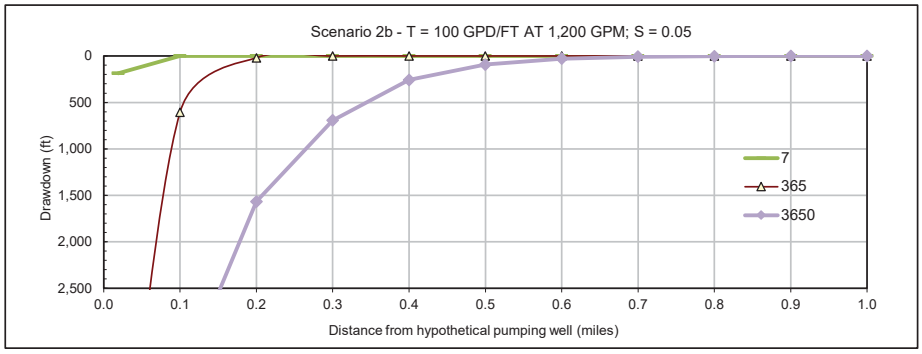
Assumed Parameter Values

Q=	1,450	(gpm)
T=	100	(gpd/ft)
S=	0.05	(dimensionless)

			Radius (ft)									
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	0.01	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	1.77	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
7.0	10080	186.73	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
15.0	21600	720.65	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
30.0	43200	1458.27	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!
60.0	86400	2379.09	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	129600	2971.90	18.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	172800	3408.69	51.80	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	259200	4040.66	155.70	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.0	352800	4530.57	295.19	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
365.0	525600	5172.47	604.70	19.65	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
730.0	1051200	6303.19	1296.40	160.73	12.06	0.47	0.01	0.00	0.00	0.00	0.00	0.00
1095.0	1576800	6969.90	1799.06	395.23	54.10	5.44	0.35	0.01	0.00	0.00	0.00	0.00
1460.0	2102400	7444.41	2187.83	604.70	121.19	19.65	2.32	0.19	0.01	0.00	0.00	0.00
1825.0	2628000	7813.08	2503.81	800.37	202.80	43.97	7.46	0.97	0.10	0.01	0.00	0.00
3650.0	5256000	8960.63	3543.07	1565.70	693.61	257.73	92.07	29.27	8.21	2.02	0.43	0.08

Chart Data

Distance (miles)	Days	Time 7	120	180	245	365	730	1095	1460	1825	3650
0.0		186.73	3408.69	4040.66	4530.57	5172.47	6303.19	6969.90	7444.41	######	8960.63
0.1		0.00	51.80	155.70	295.19	604.70	1296.40	1799.06	2187.83	######	3543.07
0.2		0.00	0.01	0.43	3.03	19.65	160.73	395.23	604.70	800.37	1565.70
0.3		0.00	0.00	0.00	0.00	0.19	12.06	54.10	121.19	202.80	693.61
0.4		0.00	0.00	0.00	0.00	0.00	0.47	5.44	19.65	43.97	257.73
0.5		#NUM!	0.00	0.00	0.00	0.00	0.01	0.35	2.32	7.46	92.07
0.6		#NUM!	0.00	0.00	0.00	0.00	0.00	0.01	0.19	0.97	29.27
0.7		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.10	8.21
0.8		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	2.02
0.9		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
1.0		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

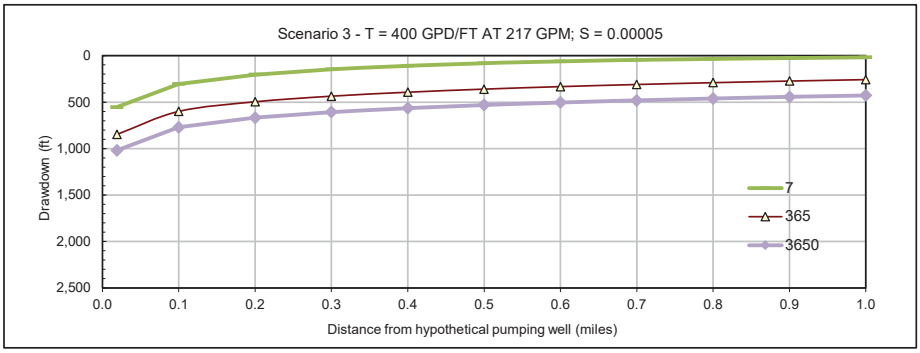
Assumed Parameter Values

Q=	260	(gpm)
T=	400	(gpd/ft)
S=	0.00005	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	408.49	165.20	75.38	34.78	13.73	5.25	1.81	0.56	0.15	0.04	0.01
2.0	2880	460.03	214.46	118.19	68.72	39.83	22.54	10.97	5.52	2.64	1.19	0.51
7.0	10080	553.29	306.06	204.86	147.81	109.54	81.98	61.46	45.94	34.13	25.16	18.37
15.0	21600	610.05	362.47	260.17	201.36	160.70	130.25	106.42	87.29	71.71	58.88	48.27
30.0	43200	661.67	413.94	311.16	251.56	209.81	177.99	152.55	131.60	113.99	98.99	86.08
60.0	86400	713.30	465.49	362.47	302.46	260.17	227.64	201.36	179.42	160.70	144.48	130.25
90.0	129600	743.51	495.67	392.56	332.43	289.94	257.18	230.61	208.33	189.23	172.58	157.87
120.0	172800	764.94	517.08	413.94	353.73	311.16	278.28	251.56	229.11	209.81	192.94	177.99
180.0	259200	795.14	547.27	444.09	383.82	341.15	308.14	281.28	258.66	239.17	222.07	206.88
245.0	352800	818.10	570.23	467.02	406.72	364.00	330.93	303.99	281.28	261.68	244.46	229.14
365.0	525600	847.80	599.92	496.69	436.35	393.59	360.46	333.45	310.65	290.96	273.64	258.19
730.0	1051200	899.43	651.54	548.30	487.93	445.11	411.93	384.84	361.96	342.17	324.73	309.16
1095.0	1576800	929.63	681.75	578.49	518.11	475.28	442.08	414.96	392.06	372.23	354.76	339.14
1460.0	2102400	951.06	703.17	599.92	539.53	496.69	463.48	436.35	413.43	393.59	376.10	360.46
1825.0	2628000	967.68	719.80	616.54	556.15	513.30	480.08	452.95	430.02	410.17	392.67	377.02
3650.0	5256000	1019.32	771.43	668.17	607.77	564.92	531.68	504.54	481.59	461.71	444.19	428.52

Chart Data

Distance (miles)	Days / Time	7	120	180	245	365	730	1095	1460	1825	3650
0.0		553.29	764.94	795.14	818.10	847.80	899.43	929.63	951.06	967.68	1019.32
0.1		306.06	517.08	547.27	570.23	599.92	651.54	681.75	703.17	719.80	771.43
0.2		204.86	413.94	444.09	467.02	496.69	548.30	578.49	599.92	616.54	668.17
0.3		147.81	353.73	383.82	406.72	436.35	487.93	518.11	539.53	556.15	607.77
0.4		109.54	311.16	341.15	364.00	393.59	445.11	475.28	496.69	513.30	564.92
0.5		81.98	278.28	308.14	330.93	360.46	411.93	442.08	463.48	480.08	531.68
0.6		61.46	251.56	281.28	303.99	333.45	384.84	414.96	436.35	452.95	504.54
0.7		45.94	229.11	258.66	281.28	310.65	361.96	392.06	413.43	430.02	481.59
0.8		34.13	209.81	239.17	261.68	290.96	342.17	372.23	393.59	410.17	461.71
0.9		25.16	192.94	222.07	244.46	273.64	324.73	354.76	376.10	392.67	444.19
1.0		18.37	177.99	206.88	229.14	258.19	309.16	339.14	360.46	377.02	428.52



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

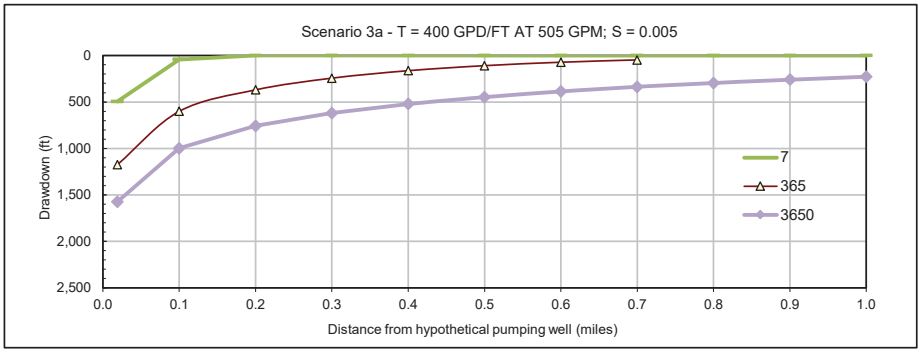
Assumed Parameter Values

Q=	605	(gpm)
T=	400	(gpd/ft)
S=	0.005	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	190.16	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!
2.0	2880	291.72	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.0	10080	494.92	42.75	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	21600	623.97	112.31	10.33	0.50	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30.0	43200	742.78	200.30	47.62	7.44	0.88	0.07	0.00	0.00	0.00	0.00	0.00
60.0	86400	862.25	303.07	112.31	39.49	10.33	2.49	0.50	0.08	0.01	0.00	0.00
90.0	129600	932.30	367.35	161.53	71.10	26.17	9.25	2.90	0.80	0.19	0.04	0.01
120.0	172800	982.05	414.18	200.30	99.43	47.62	18.79	7.44	2.69	0.88	0.26	0.07
180.0	259200	1052.22	481.39	259.10	146.51	82.14	44.70	20.54	9.77	4.38	1.85	0.73
245.0	352800	1105.60	533.19	306.28	186.90	114.64	69.29	40.85	20.54	10.90	5.54	2.69
365.0	525600	1174.64	600.79	369.58	243.63	163.32	109.29	72.35	47.12	26.88	16.29	9.60
730.0	1051200	1294.73	719.40	483.70	350.65	261.17	196.54	148.24	111.55	83.49	62.03	45.68
1095.0	1576800	1365.00	789.16	551.95	416.44	323.67	255.06	202.23	160.64	127.49	100.91	79.54
1460.0	2102400	1414.85	838.77	600.79	464.04	369.58	298.88	243.63	199.35	163.32	133.72	109.29
1825.0	2628000	1453.52	877.29	638.85	501.35	405.86	333.87	277.12	231.15	193.26	161.70	135.23
3650.0	5256000	1573.66	997.13	757.77	618.74	521.16	446.54	386.64	337.08	295.21	259.31	228.21

Chart Data

Distance (miles)	Days / Time	7	120	180	245	365	730	1095	1460	1825	3650
0.0		494.92	982.05	1052.22	1105.60	1174.64	1294.73	1365.00	1414.85	######	1573.66
0.1		42.75	414.18	481.39	533.19	600.79	719.40	789.16	838.77	877.29	997.13
0.2		0.64	200.30	259.10	306.28	369.58	483.70	551.95	600.79	638.85	757.77
0.3		0.00	99.43	146.51	186.90	243.63	350.65	416.44	464.04	501.35	618.74
0.4		0.00	47.62	82.14	114.64	163.32	261.17	323.67	369.58	405.86	521.16
0.5		0.00	18.79	44.70	69.29	109.29	196.54	255.06	298.88	333.87	446.54
0.6		0.00	7.44	20.54	40.85	72.35	148.24	202.23	243.63	277.12	386.64
0.7		0.00	2.69	9.77	20.54	47.12	111.55	160.64	199.35	231.15	337.08
0.8		0.00	0.88	4.38	10.90	26.88	83.49	127.49	163.32	193.26	295.21
0.9		0.00	0.26	1.85	5.54	16.29	62.03	100.91	133.72	161.70	259.31
1.0		0.00	0.07	0.73	2.69	9.60	45.68	79.54	109.29	135.23	228.21



Assumptions
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Reference:
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

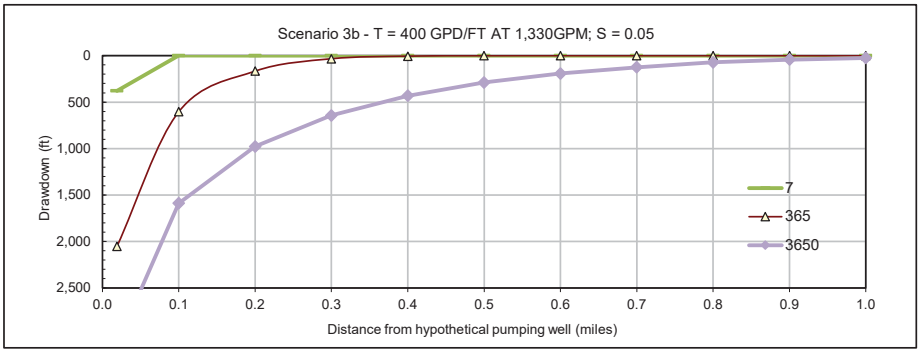
Assumed Parameter Values

Q=	1,600	(gpm)
T=	400	(gpd/ft)
S=	0.05	(dimensionless)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**528**	**1,056**	**1,584**	**2,112**	**2,640**	**3,168**	**3,696**	**4,224**	**4,752**	**5,280**
1.00	1440	11.25	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	68.01	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
7.0	10080	379.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#NUM!	#NUM!
15.0	21600	656.30	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	43200	940.33	14.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	86400	1240.72	78.35	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	129600	1420.73	163.73	5.13	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	172800	1549.66	234.12	14.29	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	259200	1732.57	353.22	42.95	3.13	0.12	0.00	0.00	0.00	0.00	0.00	0.00
245.0	352800	1872.32	456.75	81.43	10.38	0.84	0.04	0.00	0.00	0.00	0.00	0.00
365.0	525600	2053.63	603.54	166.81	33.43	5.42	0.64	0.05	0.00	0.00	0.00	0.00
730.0	1051200	2369.90	882.97	357.63	141.50	44.34	13.11	3.33	0.72	0.13	0.02	0.00
1095.0	1576800	2555.28	1055.69	496.29	237.81	109.03	40.32	14.92	4.99	1.50	0.40	0.10
1460.0	2102400	2686.91	1180.92	603.54	320.66	166.81	74.43	33.43	13.98	5.42	1.94	0.64
1825.0	2628000	2789.05	1279.20	690.71	392.04	220.79	120.80	55.95	26.82	12.13	5.16	2.06
3650.0	5256000	3106.50	1588.86	977.40	644.31	431.92	289.04	191.34	124.62	71.10	43.09	25.40

Chart Data

Distance (miles)	Days	Time 7	120	180	245	365	730	1095	1460	1825	3650
0.0		379.38	1549.66	1732.57	1872.32	2053.63	2369.90	2555.28	2686.91	######	3106.50
0.1		0.00	234.12	353.22	456.75	603.54	882.97	1055.69	1180.92	######	1588.86
0.2		0.00	14.29	42.95	81.43	166.81	357.63	496.29	603.54	690.71	977.40
0.3		0.00	0.37	3.13	10.38	33.43	141.50	237.81	320.66	392.04	644.31
0.4		0.00	0.00	0.12	0.84	5.42	44.34	109.03	166.81	220.79	431.92
0.5		0.00	0.00	0.00	0.04	0.64	13.11	40.32	74.43	120.80	289.04
0.6		0.00	0.00	0.00	0.00	0.05	3.33	14.92	33.43	55.95	191.34
0.7		0.00	0.00	0.00	0.00	0.00	0.72	4.99	13.98	26.82	124.62
0.8		0.00	0.00	0.00	0.00	0.00	0.13	1.50	5.42	12.13	71.10
0.9		#NUM!	0.00	0.00	0.00	0.00	0.02	0.40	1.94	5.16	43.09
1.0		#NUM!	0.00	0.00	0.00	0.00	0.00	0.10	0.64	2.06	25.40



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

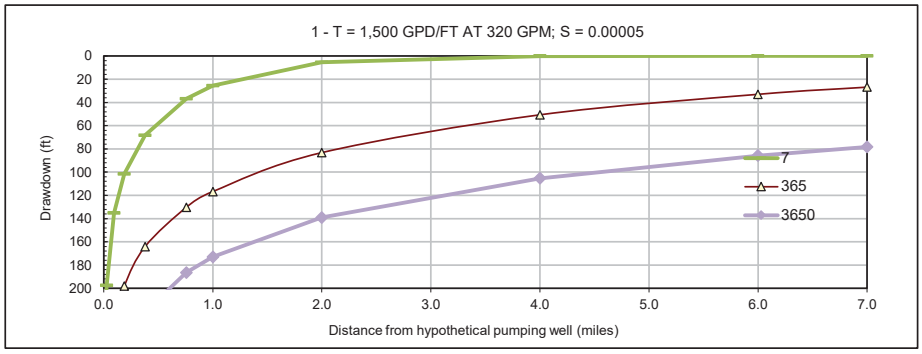
Q=	320	(gpm)
T=	1,500	(gpd/ft)
S=	0.00005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	166.34	149.90	88.01	55.24	25.58	5.39	1.46	0.00	0.00	0.00	0.00
2.0	2880	183.28	166.83	104.77	71.44	39.75	13.72	6.72	0.12	0.00	0.00	0.00
7.0	10080	213.90	197.45	135.26	101.53	68.28	36.89	25.66	5.43	0.06	0.00	0.00
15.0	21600	232.53	216.08	153.86	120.05	86.46	53.76	41.34	14.83	1.22	0.05	0.01
30.0	43200	249.48	233.03	170.80	136.94	103.20	69.91	56.93	26.99	6.07	0.87	0.30
60.0	86400	266.42	249.97	187.73	153.86	120.05	86.46	73.18	41.34	14.83	4.51	2.40
90.0	129600	276.34	259.88	197.65	163.77	129.92	96.24	82.86	50.35	21.61	9.22	5.88
120.0	172800	283.37	266.92	204.68	170.80	136.94	103.20	89.78	56.93	26.99	13.07	8.97
180.0	259200	293.28	276.83	214.59	180.70	146.84	113.05	99.57	66.38	35.19	19.54	14.52
245.0	352800	300.82	284.37	222.13	188.24	154.37	120.55	107.05	73.67	41.79	25.13	19.54
365.0	525600	310.57	294.11	231.87	197.98	164.10	130.26	116.74	83.19	50.66	33.03	26.86
730.0	1051200	327.51	311.06	248.82	214.93	181.04	147.17	133.62	99.91	66.70	48.01	41.19
1095.0	1576800	337.42	320.97	258.73	224.84	190.95	157.08	143.52	109.74	76.31	57.25	50.20
1460.0	2102400	344.46	328.01	265.76	231.87	197.98	164.10	150.54	116.74	83.19	63.94	56.77
1825.0	2628000	349.91	333.46	271.22	237.33	203.44	169.56	155.99	122.17	88.55	69.19	61.95
3650.0	5256000	366.86	350.41	288.16	254.27	220.38	186.49	172.92	139.07	105.31	85.72	78.33

Chart Data

Distance (miles)	Days	Time 7	120	180	245	365	730	1095	1460	1825	3650
0.0		213.90	283.37	293.28	300.82	310.57	327.51	337.42	344.46	349.91	366.86
0.0		197.45	266.92	276.83	284.37	294.11	311.06	320.97	328.01	333.46	350.41
0.1		135.26	204.68	214.59	222.13	231.87	248.82	258.73	265.76	271.22	288.16
0.2		101.53	170.80	180.70	188.24	197.98	214.93	224.84	231.87	237.33	254.27
0.4		68.28	136.94	146.84	154.37	164.10	181.04	190.95	197.98	203.44	220.38
0.8		36.89	103.20	113.05	120.55	130.26	147.17	157.08	164.10	169.56	186.49
1.0		25.66	89.78	99.57	107.05	116.74	133.62	143.52	150.54	155.99	172.92
2.0		5.43	56.93	66.38	73.67	83.19	99.91	109.74	116.74	122.17	139.07
4.0		0.06	26.99	35.19	41.79	50.66	66.70	76.31	83.19	88.55	105.31
6.0		0.00	13.07	19.54	25.13	33.03	48.01	57.25	63.94	69.19	85.72
7.0		0.00	8.97	14.52	19.54	26.86	41.19	50.20	56.77	61.95	78.33



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

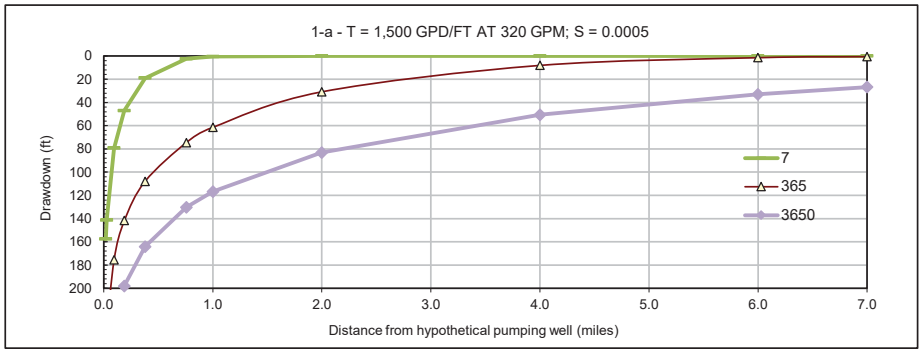
Q=	320	(gpm)
T=	1,500	(gpd/ft)
S=	0.0005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	110.18	93.88	35.00	10.60	0.48	0.00	0.00	0.00	0.00	#NUM!	#NUM!
2.0	2880	127.05	110.67	50.15	21.45	3.18	0.02	0.00	0.00	0.00	0.00	0.00
7.0	10080	157.63	141.20	79.45	47.15	19.12	2.38	0.49	0.00	0.00	0.00	0.00
15.0	21600	176.25	159.81	97.80	64.66	33.66	9.77	3.69	0.03	0.00	0.00	0.00
30.0	43200	193.19	176.74	114.62	81.10	48.69	20.31	11.59	0.62	0.00	0.00	0.00
60.0	86400	210.13	193.68	131.50	97.80	64.66	33.66	22.78	3.69	0.03	0.00	0.00
90.0	129600	220.04	203.59	141.39	107.62	74.24	42.31	30.60	7.99	0.21	0.00	0.00
120.0	172800	227.08	210.63	148.41	114.62	81.10	48.69	36.55	11.59	0.62	0.01	0.00
180.0	259200	236.99	220.54	158.31	124.49	90.85	57.95	45.35	17.75	1.97	0.12	0.02
245.0	352800	244.53	228.08	165.85	132.00	98.29	65.14	52.28	23.16	3.84	0.44	0.12
365.0	525600	254.27	237.82	175.59	141.73	107.96	74.56	61.48	30.88	8.14	1.51	0.60
730.0	1051200	271.22	254.77	192.53	158.65	124.82	91.18	77.85	45.65	17.98	6.86	3.64
1095.0	1576800	281.13	264.68	202.44	168.56	134.71	100.98	87.57	54.82	25.24	11.78	7.91
1460.0	2102400	288.16	271.71	209.47	175.59	141.73	107.96	94.51	61.48	30.88	16.06	11.49
1825.0	2628000	293.62	277.17	214.93	181.04	147.17	113.38	99.91	66.70	35.48	19.78	14.73
3650.0	5256000	310.57	294.11	231.87	197.98	164.10	130.26	116.74	83.19	50.66	33.03	26.86

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		157.63	227.08	236.99	244.53	254.27	271.22	281.13	288.16	293.62	310.57
0.0		141.20	210.63	220.54	228.08	237.82	254.77	264.68	271.71	277.17	294.11
0.1		79.45	148.41	158.31	165.85	175.59	192.53	202.44	209.47	214.93	231.87
0.2		47.15	114.62	124.49	132.00	141.73	158.65	168.56	175.59	181.04	197.98
0.4		19.12	81.10	90.85	98.29	107.96	124.82	134.71	141.73	147.17	164.10
0.8		2.38	48.69	57.95	65.14	74.56	91.18	100.98	107.96	113.38	130.26
1.0		0.49	36.55	45.35	52.28	61.48	77.85	87.57	94.51	99.91	116.74
2.0		0.00	11.59	17.75	23.16	30.88	45.65	54.82	61.48	66.70	83.19
4.0		0.00	0.62	1.97	3.84	8.14	17.98	25.24	30.88	35.48	50.66
6.0		0.00	0.01	0.12	0.44	1.51	6.86	11.78	16.06	19.78	33.03
7.0		0.00	0.00	0.02	0.12	0.60	3.64	7.91	11.49	14.73	26.86



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

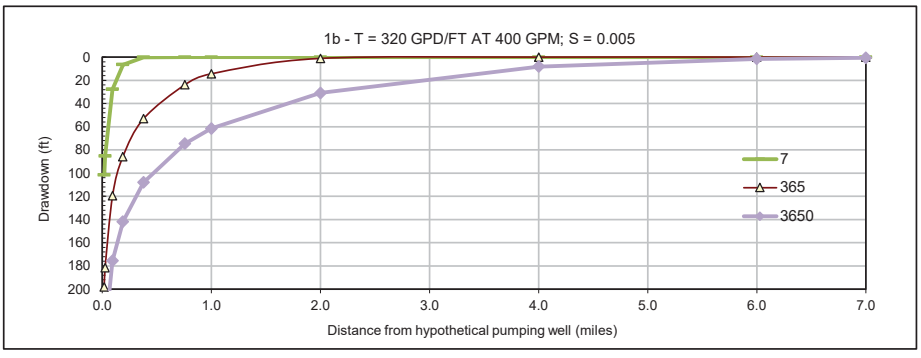
Q=	320	(gpm)
T=	1,500	(gpd/ft)
S=	0.005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	55.24	40.18	1.92	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	#NUM!
2.0	2880	71.44	55.70	7.89	0.20	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!
7.0	10080	101.53	85.28	27.77	6.47	0.11	0.00	0.00	0.00	0.00	#NUM!	#NUM!
15.0	21600	120.05	103.69	43.72	16.55	1.64	0.00	0.00	0.00	0.00	0.00	0.00
30.0	43200	136.94	120.54	59.45	29.13	7.18	0.15	0.01	0.00	0.00	0.00	0.00
60.0	86400	153.86	137.43	75.77	43.72	16.55	1.64	0.27	0.00	0.00	0.00	0.00
90.0	129600	163.77	147.33	85.48	52.83	23.60	4.02	1.09	0.00	0.00	0.00	0.00
120.0	172800	170.80	154.36	92.40	59.45	29.13	7.18	2.29	0.01	0.00	0.00	0.00
180.0	259200	180.70	164.26	102.21	68.95	37.49	12.20	5.69	0.07	0.00	0.00	0.00
245.0	352800	188.24	171.79	109.69	76.26	44.18	16.89	8.98	0.30	0.00	0.00	0.00
365.0	525600	197.98	181.53	119.39	85.81	53.14	23.86	14.42	1.13	0.00	0.00	0.00
730.0	1051200	214.93	198.48	136.28	102.55	69.27	37.78	26.47	5.81	0.08	0.00	0.00
1095.0	1576800	224.84	208.39	146.18	112.39	78.91	46.64	34.62	10.37	0.45	0.01	0.00
1460.0	2102400	231.87	215.42	153.20	119.39	85.81	53.14	40.75	14.42	1.13	0.04	0.01
1825.0	2628000	237.33	220.88	158.65	124.82	91.18	58.27	45.65	17.98	2.03	0.13	0.03
3650.0	5256000	254.27	237.82	175.59	141.73	107.96	74.56	61.48	30.88	8.14	1.51	0.60

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		101.53	170.80	180.70	188.24	197.98	214.93	224.84	231.87	237.33	254.27
0.0		85.28	154.36	164.26	171.79	181.53	198.48	208.39	215.42	220.88	237.82
0.1		27.77	92.40	102.21	109.69	119.39	136.28	146.18	153.20	158.65	175.59
0.2		6.47	59.45	68.95	76.26	85.81	102.55	112.39	119.39	124.82	141.73
0.4		0.11	29.13	37.49	44.18	53.14	69.27	78.91	85.81	91.18	107.96
0.8		0.00	7.18	12.20	16.89	23.86	37.78	46.64	53.14	58.27	74.56
1.0		0.00	2.29	5.69	8.98	14.42	26.47	34.62	40.75	45.65	61.48
2.0		0.00	0.01	0.07	0.30	1.13	5.81	10.37	14.42	17.98	30.88
4.0		0.00	0.00	0.00	0.00	0.00	0.08	0.45	1.13	2.03	8.14
6.0		#NUM!	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.13	1.51
7.0		#NUM!	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.60



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

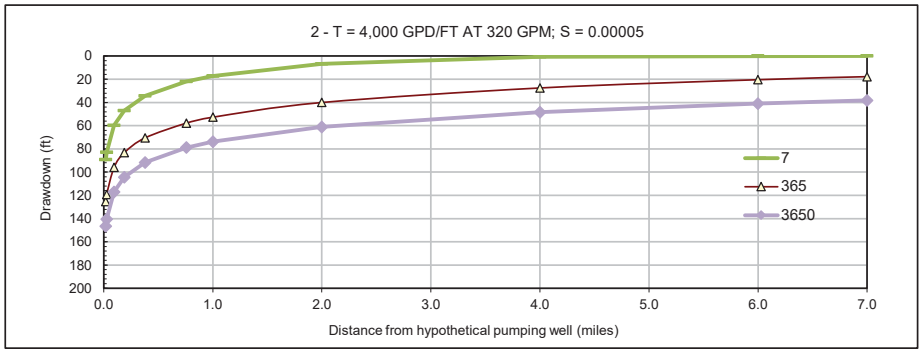
Q=	320	(gpm)
T=	4,000	(gpd/ft)
S=	0.00005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	71.37	65.20	41.91	29.36	17.27	6.86	3.76	0.15	0.00	0.00	0.00
2.0	2880	77.72	71.55	48.23	35.61	23.21	11.72	7.75	1.09	0.00	0.00	0.00
7.0	10080	89.20	83.04	59.70	47.01	34.40	22.05	17.31	6.89	0.80	0.06	0.01
15.0	21600	96.19	90.02	66.68	53.99	41.32	28.78	23.86	12.28	3.46	0.71	0.30
30.0	43200	102.55	96.38	73.04	60.33	47.65	35.02	30.01	17.89	7.33	2.94	1.63
60.0	86400	108.90	102.73	79.39	66.68	53.99	41.32	36.27	23.86	12.28	6.58	4.79
90.0	129600	112.62	106.45	83.11	70.40	57.70	45.02	39.95	27.44	15.50	9.28	7.19
120.0	172800	115.26	109.09	85.75	73.04	60.33	47.65	42.58	30.01	17.89	11.38	9.13
180.0	259200	118.97	112.80	89.46	76.75	64.05	51.35	46.28	33.67	21.35	14.55	12.12
245.0	352800	121.80	115.63	92.29	79.58	66.87	54.17	49.09	36.46	24.04	17.07	14.55
365.0	525600	125.45	119.28	95.94	83.23	70.53	57.82	52.74	40.08	27.57	20.45	17.83
730.0	1051200	131.81	125.64	102.30	89.59	76.88	64.17	59.09	46.40	33.79	26.52	23.80
1095.0	1576800	135.53	129.36	106.02	93.31	80.60	67.89	62.80	50.11	37.46	30.14	27.38
1460.0	2102400	138.16	131.99	108.65	95.94	83.23	70.53	65.44	52.74	40.08	32.73	29.95
1825.0	2628000	140.21	134.04	110.70	97.99	85.28	72.57	67.48	54.78	42.11	34.74	31.96
3650.0	5256000	146.56	140.39	117.05	104.34	91.63	78.93	73.84	61.13	48.44	41.04	38.23

Chart Data

Distance (miles)	Days / Time	7	120	180	245	365	730	1095	1460	1825	3650
0.0		89.20	115.26	118.97	121.80	125.45	131.81	135.53	138.16	140.21	146.56
0.0		83.04	109.09	112.80	115.63	119.28	125.64	129.36	131.99	134.04	140.39
0.1		59.70	85.75	89.46	92.29	95.94	102.30	106.02	108.65	110.70	117.05
0.2		47.01	73.04	76.75	79.58	83.23	89.59	93.31	95.94	97.99	104.34
0.4		34.40	60.33	64.05	66.87	70.53	76.88	80.60	83.23	85.28	91.63
0.8		22.05	47.65	51.35	54.17	57.82	64.17	67.89	70.53	72.57	78.93
1.0		17.31	42.58	46.28	49.09	52.74	59.09	62.80	65.44	67.48	73.84
2.0		6.89	30.01	33.67	36.46	40.08	46.40	50.11	52.74	54.78	61.13
4.0		0.80	17.89	21.35	24.04	27.57	33.79	37.46	40.08	42.11	48.44
6.0		0.06	11.38	14.55	17.07	20.45	26.52	30.14	32.73	34.74	41.04
7.0		0.01	9.13	12.12	14.55	17.83	23.80	27.38	29.95	31.96	38.23



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

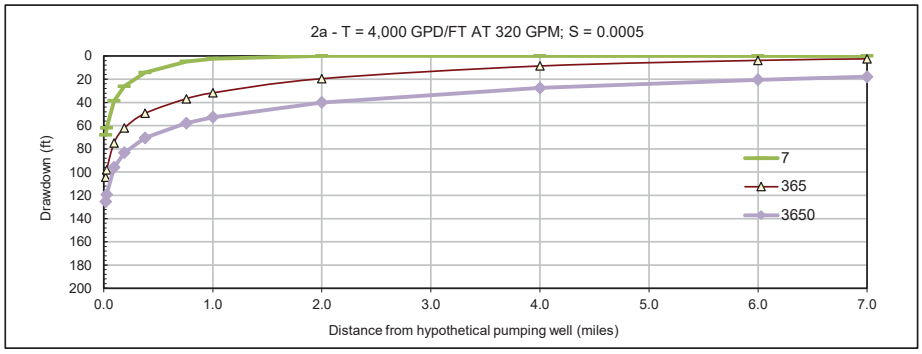
Q=	320	(gpm)
T=	4,000	(gpd/ft)
S=	0.0005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	50.28	44.13	21.27	10.06	2.25	0.03	0.00	0.00	0.00	0.00	0.00
2.0	2880	56.62	50.46	27.36	15.43	5.51	0.45	0.06	0.00	0.00	0.00	0.00
7.0	10080	68.10	61.93	38.66	26.18	14.35	4.77	2.26	0.03	0.00	0.00	0.00
15.0	21600	75.08	68.91	45.61	33.00	20.71	9.59	5.94	0.55	0.00	0.00	0.00
30.0	43200	81.44	75.27	51.94	39.29	26.79	14.91	10.59	2.52	0.05	0.00	0.00
60.0	86400	87.79	81.62	58.29	45.61	33.00	20.71	16.03	5.94	0.55	0.03	0.00
90.0	129600	91.51	85.34	62.00	49.31	36.67	24.25	19.43	8.54	1.38	0.15	0.04
120.0	172800	94.15	87.98	64.64	51.94	39.29	26.79	21.91	10.59	2.52	0.39	0.14
180.0	259200	97.86	91.69	68.36	55.65	42.98	30.41	25.46	13.70	4.34	1.09	0.52
245.0	352800	100.69	94.52	71.18	58.48	45.79	33.19	28.20	16.20	6.06	2.16	1.09
365.0	525600	104.34	98.17	74.84	62.13	49.44	36.80	31.78	19.55	8.64	3.83	2.49
730.0	1051200	110.70	104.53	81.19	68.48	55.78	43.11	38.05	25.58	13.81	7.84	5.90
1095.0	1576800	114.42	108.25	84.91	72.20	59.49	46.81	41.74	29.19	17.12	10.70	8.50
1460.0	2102400	117.05	110.88	87.54	74.84	62.13	49.44	44.36	31.78	19.55	12.89	10.54
1825.0	2628000	119.10	112.93	89.59	76.88	64.17	51.48	46.40	33.79	21.47	14.66	12.23
3650.0	5256000	125.45	119.28	95.94	83.23	70.53	57.82	52.74	40.08	27.57	20.45	17.83

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		68.10	94.15	97.86	100.69	104.34	110.70	114.42	117.05	119.10	125.45
0.0		61.93	87.98	91.69	94.52	98.17	104.53	108.25	110.88	112.93	119.28
0.1		38.66	64.64	68.36	71.18	74.84	81.19	84.91	87.54	89.59	95.94
0.2		26.18	51.94	55.65	58.48	62.13	68.48	72.20	74.84	76.88	83.23
0.4		14.35	39.29	42.98	45.79	49.44	55.78	59.49	62.13	64.17	70.53
0.8		4.77	26.79	30.41	33.19	36.80	43.11	46.81	49.44	51.48	57.82
1.0		2.26	21.91	25.46	28.20	31.78	38.05	41.74	44.36	46.40	52.74
2.0		0.03	10.59	13.70	16.20	19.55	25.58	29.19	31.78	33.79	40.08
4.0		0.00	2.52	4.34	6.06	8.64	13.81	17.12	19.55	21.47	27.57
6.0		0.00	0.39	1.09	2.16	3.83	7.84	10.70	12.89	14.66	20.45
7.0		0.00	0.14	0.52	1.09	2.49	5.90	8.50	10.54	12.23	17.83



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

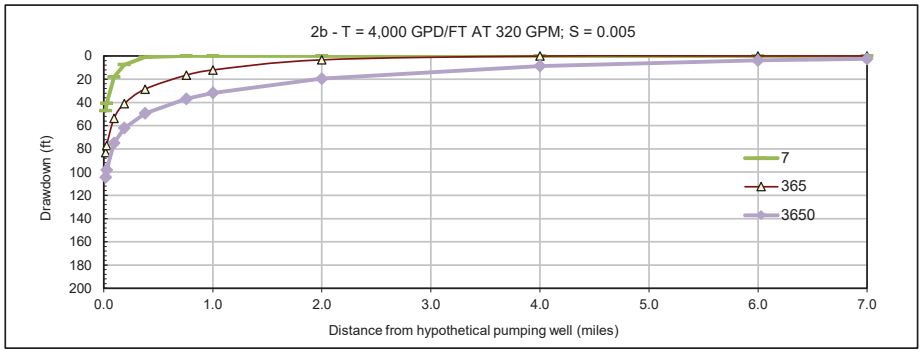
Q=	320	(gpm)
T=	4,000	(gpd/ft)
S=	0.005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**140**	**500**	**1,000**	**2,000**	**4,000**	**5,280**	**10,560**	**21,120**	**31,680**	**36,960**
1.00	1440	29.36	23.39	4.30	0.23	0.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!
2.0	2880	35.61	29.54	8.48	1.36	0.01	0.00	0.00	0.00	0.00	#NUM!	#NUM!
7.0	10080	47.01	40.87	18.22	7.59	1.03	0.00	0.00	0.00	0.00	0.00	0.00
15.0	21600	53.99	47.83	24.81	13.13	3.98	0.18	0.01	0.00	0.00	0.00	0.00
30.0	43200	60.33	54.17	30.99	18.81	8.05	1.19	0.29	0.00	0.00	0.00	0.00
60.0	86400	66.68	60.52	37.26	24.81	13.13	3.98	1.57	0.01	0.00	0.00	0.00
90.0	129600	70.40	64.23	40.95	28.41	16.40	6.21	3.27	0.10	0.00	0.00	0.00
120.0	172800	73.04	66.87	43.57	30.99	18.81	8.05	4.68	0.29	0.00	0.00	0.00
180.0	259200	76.75	70.59	47.27	34.65	22.29	10.92	7.06	0.86	0.00	0.00	0.00
245.0	352800	79.58	73.41	50.09	37.45	25.00	13.29	9.13	1.63	0.02	0.00	0.00
365.0	525600	83.23	77.07	53.74	41.07	28.54	16.51	12.07	3.34	0.11	0.00	0.00
730.0	1051200	89.59	83.42	60.09	47.40	34.78	22.41	17.66	7.15	0.89	0.07	0.01
1095.0	1576800	93.31	87.14	63.80	51.11	38.45	25.98	21.11	9.93	2.18	0.30	0.10
1460.0	2102400	95.94	89.77	66.44	53.74	41.07	28.54	23.62	12.07	3.34	0.67	0.28
1825.0	2628000	97.99	91.82	68.48	55.78	43.11	30.54	25.58	13.81	4.42	1.12	0.54
3650.0	5256000	104.34	98.17	74.84	62.13	49.44	36.80	31.78	19.55	8.64	3.83	2.49

Chart Data

Distance (miles)	Days	Time 7	120	180	245	365	730	1095	1460	1825	3650
0.0		47.01	73.04	76.75	79.58	83.23	89.59	93.31	95.94	97.99	104.34
0.0		40.87	66.87	70.59	73.41	77.07	83.42	87.14	89.77	91.82	98.17
0.1		18.22	43.57	47.27	50.09	53.74	60.09	63.80	66.44	68.48	74.84
0.2		7.59	30.99	34.65	37.45	41.07	47.40	51.11	53.74	55.78	62.13
0.4		1.03	18.81	22.29	25.00	28.54	34.78	38.45	41.07	43.11	49.44
0.8		0.00	8.05	10.92	13.29	16.51	22.41	25.98	28.54	30.54	36.80
1.0		0.00	4.68	7.06	9.13	12.07	17.66	21.11	23.62	25.58	31.78
2.0		0.00	0.29	0.86	1.63	3.34	7.15	9.93	12.07	13.81	19.55
4.0		0.00	0.00	0.00	0.02	0.11	0.89	2.18	3.34	4.42	8.64
6.0		0.00	0.00	0.00	0.00	0.00	0.07	0.30	0.67	1.12	3.83
7.0		0.00	0.00	0.00	0.00	0.00	0.01	0.10	0.28	0.54	2.49



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

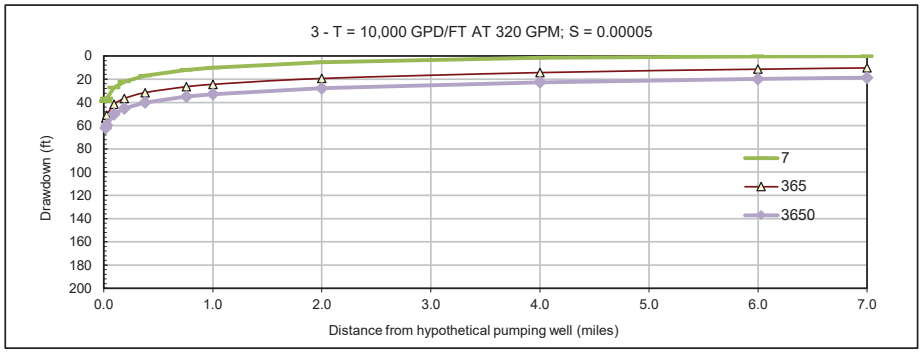
Q=	320	(gpm)
T=	10,000	(gpd/ft)
S=	0.00005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	31.91	29.44	20.11	15.05	10.07	5.38	3.71	0.68	0.01	0.00	0.00
2.0	2880	34.45	31.98	22.65	17.58	12.54	7.66	5.82	1.96	0.13	0.00	0.00
7.0	10080	39.04	36.57	27.24	22.16	17.09	12.06	10.09	5.39	1.68	0.41	0.19
15.0	21600	41.84	39.37	30.03	24.95	19.87	14.82	12.81	7.91	3.53	1.58	1.04
30.0	43200	44.38	41.91	32.57	27.49	22.41	17.34	15.32	10.33	5.61	3.21	2.42
60.0	86400	46.92	44.45	35.12	30.03	24.95	19.87	17.84	12.81	7.91	5.24	4.30
90.0	129600	48.41	45.94	36.60	31.52	26.44	21.36	19.33	14.27	9.32	6.55	5.55
120.0	172800	49.46	46.99	37.66	32.57	27.49	22.41	20.38	15.32	10.33	7.51	6.48
180.0	259200	50.95	48.48	39.15	34.06	28.98	23.90	21.86	16.79	11.77	8.90	7.84
245.0	352800	52.08	49.61	40.28	35.19	30.11	25.03	22.99	17.92	12.88	9.99	8.90
365.0	525600	53.54	51.07	41.74	36.65	31.57	26.49	24.45	19.38	14.32	11.40	10.31
730.0	1051200	56.08	53.62	44.28	39.20	34.11	29.03	26.99	21.91	16.85	13.90	12.78
1095.0	1576800	57.57	55.10	45.77	40.68	35.60	30.52	28.48	23.40	18.33	15.37	14.25
1460.0	2102400	58.63	56.16	46.82	41.74	36.65	31.57	29.53	24.45	19.38	16.42	15.29
1825.0	2628000	59.44	56.98	47.64	42.56	37.47	32.39	30.35	25.27	20.19	17.23	16.11
3650.0	5256000	61.99	59.52	50.18	45.10	40.01	34.93	32.89	27.81	22.73	19.76	18.63

Chart Data

Distance (miles)	Time Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		39.04	49.46	50.95	52.08	53.54	56.08	57.57	58.63	59.44	61.99
0.0		36.57	46.99	48.48	49.61	51.07	53.62	55.10	56.16	56.98	59.52
0.1		27.24	37.66	39.15	40.28	41.74	44.28	45.77	46.82	47.64	50.18
0.2		22.16	32.57	34.06	35.19	36.65	39.20	40.68	41.74	42.56	45.10
0.4		17.09	27.49	28.98	30.11	31.57	34.11	35.60	36.65	37.47	40.01
0.8		12.06	22.41	23.90	25.03	26.49	29.03	30.52	31.57	32.39	34.93
1.0		10.09	20.38	21.86	22.99	24.45	26.99	28.48	29.53	30.35	32.89
2.0		5.39	15.32	16.79	17.92	19.38	21.91	23.40	24.45	25.27	27.81
4.0		1.68	10.33	11.77	12.88	14.32	16.85	18.33	19.38	20.19	22.73
6.0		0.41	7.51	8.90	9.99	11.40	13.90	15.37	16.42	17.23	19.76
7.0		0.19	6.48	7.84	8.90	10.31	12.78	14.25	15.29	16.11	18.63



Assumptions
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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

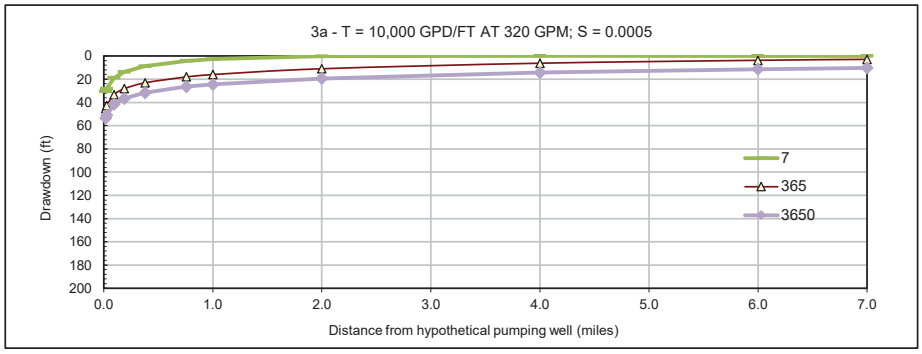
Q=	320	(gpm)
T=	10,000	(gpd/ft)
S=	0.0005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	Time (minutes)	100	140	500	1,000	2,000	4,000	5,280	10,560	21,120	31,680	36,960
1.00	1440	23.47	21.00	11.74	6.91	2.74	0.32	0.06	0.00	0.00	0.00	0.00
2.0	2880	26.01	23.54	14.24	9.29	4.69	1.25	0.43	0.00	0.00	0.00	0.00
7.0	10080	30.60	28.13	18.81	13.76	8.82	4.29	2.75	0.32	0.00	0.00	0.00
15.0	21600	33.39	30.93	21.59	16.53	11.51	6.69	4.91	1.38	0.05	0.00	0.00
30.0	43200	35.93	33.47	24.13	19.06	14.01	9.06	7.15	2.93	0.38	0.03	0.01
60.0	86400	38.48	36.01	26.67	21.59	16.53	11.51	9.54	4.91	1.38	0.29	0.12
90.0	129600	39.96	37.50	28.16	23.08	18.01	12.97	10.98	6.20	2.23	0.68	0.36
120.0	172800	41.02	38.55	29.21	24.13	19.06	14.01	12.01	7.15	2.93	1.18	0.65
180.0	259200	42.51	40.04	30.70	25.62	20.54	15.48	13.47	8.54	4.05	1.96	1.35
245.0	352800	43.64	41.17	31.83	26.75	21.67	16.60	14.58	9.61	4.98	2.68	1.96
365.0	525600	45.10	42.63	33.29	28.21	23.13	18.06	16.03	11.03	6.25	3.75	2.91
730.0	1051200	47.64	45.17	35.84	30.75	25.67	20.59	18.56	13.52	8.59	5.86	4.89
1095.0	1576800	49.13	46.66	37.32	32.24	27.16	22.08	20.04	14.99	10.01	7.20	6.18
1460.0	2102400	50.18	47.71	38.38	33.29	28.21	23.13	21.10	16.03	11.03	8.18	7.13
1825.0	2628000	51.00	48.53	39.20	34.11	29.03	23.95	21.91	16.85	11.82	8.95	7.89
3650.0	5256000	53.54	51.07	41.74	36.65	31.57	26.49	24.45	19.38	14.32	11.40	10.31

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		30.60	41.02	42.51	43.64	45.10	47.64	49.13	50.18	51.00	53.54
0.0		28.13	38.55	40.04	41.17	42.63	45.17	46.66	47.71	48.53	51.07
0.1		18.81	29.21	30.70	31.83	33.29	35.84	37.32	38.38	39.20	41.74
0.2		13.76	24.13	25.62	26.75	28.21	30.75	32.24	33.29	34.11	36.65
0.4		8.82	19.06	20.54	21.67	23.13	25.67	27.16	28.21	29.03	31.57
0.8		4.29	14.01	15.48	16.60	18.06	20.59	22.08	23.13	23.95	26.49
1.0		2.75	12.01	13.47	14.58	16.03	18.56	20.04	21.10	21.91	24.45
2.0		0.32	7.15	8.54	9.61	11.03	13.52	14.99	16.03	16.85	19.38
4.0		0.00	2.93	4.05	4.98	6.25	8.59	10.01	11.03	11.82	14.32
6.0		0.00	1.18	1.96	2.68	3.75	5.86	7.20	8.18	8.95	11.40
7.0		0.00	0.65	1.35	1.96	2.91	4.89	6.18	7.13	7.89	10.31



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

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Theis Worksheet

Project: Paramount- Grassy Mountain
Project Number: 1294.0010

Assumed Parameter Values

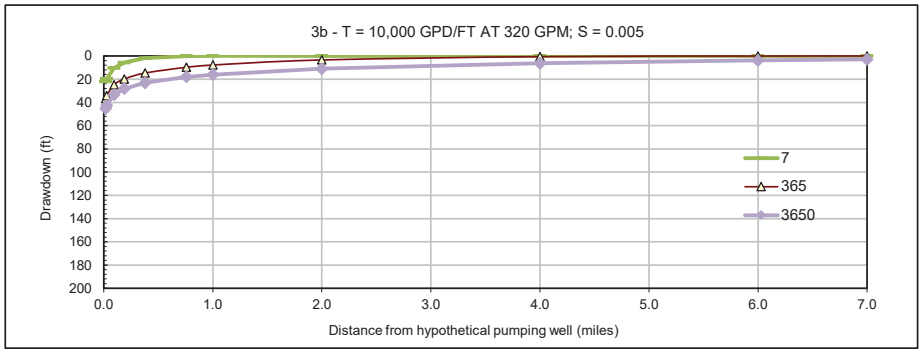
Q=	320	(gpm)
T=	10,000	(gpd/ft)
S=	0.005	(dimensionless)

assume confined aquifer range (0.005 to 0.00005)

		Radius (ft)										
Time (days)	**Time (minutes)**	**100**	**140**	**500**	**1,000**	**2,000**	**4,000**	**5,280**	**10,560**	**21,120**	**31,680**	**36,960**
1.00	1440	15.05	12.62	4.02	0.90	0.01	0.00	0.00	0.00	0.00	#NUM!	#NUM!
2.0	2880	17.58	15.13	6.17	2.20	0.18	0.00	0.00	0.00	0.00	0.00	#NUM!
7.0	10080	22.16	19.70	10.47	5.74	1.91	0.12	0.01	0.00	0.00	0.00	0.00
15.0	21600	24.95	22.49	13.20	8.29	3.84	0.81	0.22	0.00	0.00	0.00	0.00
30.0	43200	27.49	25.03	15.71	10.72	5.96	2.06	1.01	0.02	0.00	0.00	0.00
60.0	86400	30.03	27.57	18.24	13.20	8.29	3.84	2.38	0.22	0.00	0.00	0.00
90.0	129600	31.52	29.05	19.72	14.67	9.70	5.05	3.42	0.55	0.00	0.00	0.00
120.0	172800	32.57	30.11	20.78	15.71	10.72	5.96	4.24	1.01	0.02	0.00	0.00
180.0	259200	34.06	31.59	22.26	17.19	12.17	7.30	5.48	1.74	0.09	0.00	0.00
245.0	352800	35.19	32.72	23.39	18.32	13.28	8.36	6.48	2.43	0.23	0.01	0.00
365.0	525600	36.65	34.19	24.85	19.78	14.72	9.75	7.82	3.46	0.57	0.06	0.02
730.0	1051200	39.20	36.73	27.39	22.31	17.24	12.21	10.23	5.53	1.77	0.45	0.21
1095.0	1576800	40.68	38.21	28.88	23.80	18.72	13.68	11.68	6.85	2.70	1.03	0.55
1460.0	2102400	41.74	39.27	29.93	24.85	19.78	14.72	12.71	7.82	3.46	1.53	1.00
1825.0	2628000	42.56	40.09	30.75	25.67	20.59	15.53	13.52	8.59	4.09	1.99	1.37
3650.0	5256000	45.10	42.63	33.29	28.21	23.13	18.06	16.03	11.03	6.25	3.75	2.91

Chart Data

Distance		Time									
(miles)	Days	7	120	180	245	365	730	1095	1460	1825	3650
0.0		22.16	32.57	34.06	35.19	36.65	39.20	40.68	41.74	42.56	45.10
0.0		19.70	30.11	31.59	32.72	34.19	36.73	38.21	39.27	40.09	42.63
0.1		10.47	20.78	22.26	23.39	24.85	27.39	28.88	29.93	30.75	33.29
0.2		5.74	15.71	17.19	18.32	19.78	22.31	23.80	24.85	25.67	28.21
0.4		1.91	10.72	12.17	13.28	14.72	17.24	18.72	19.78	20.59	23.13
0.8		0.12	5.96	7.30	8.36	9.75	12.21	13.68	14.72	15.53	18.06
1.0		0.01	4.24	5.48	6.48	7.82	10.23	11.68	12.71	13.52	16.03
2.0		0.00	1.01	1.74	2.43	3.46	5.53	6.85	7.82	8.59	11.03
4.0		0.00	0.02	0.09	0.23	0.57	1.77	2.70	3.46	4.09	6.25
6.0		0.00	0.00	0.00	0.01	0.06	0.45	1.03	1.53	1.99	3.75
7.0		0.00	0.00	0.00	0.00	0.02	0.21	0.55	1.00	1.37	2.91



Assumptions
Assumptions inherent to the use of the non-equilibrium well equation (Theis, 1935) are that the aquifer is homogeneous and isotropic, uniform in thickness and areal extent, the aquifer receives no recharge, the pumping well penetrates the full aquifer thickness, water removed by discharge is removed instantaneously, the pumping well is 100 percent efficient, laminar flow exists throughout the aquifer, and that the water table or potentiometric surface has no slope. These assumptions are rarely completely satisfied under field conditions, but this method will often provide an indication of possible well interference.

Reference:
Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524

Appendix C
MODFLOW Calibration Heads

Steady State Groundwater Model Calibration (Head) Targets and Results

Name	X Coordinate (SP, ft)	Y Coordinate (SP, ft)	Assigned Layer	Observed Head (ft)	Computed Head (ft)	Residual (ft)
GW-1	5753366.72	746931.13	2	3653.08	3658.90323	-5.82323
GW-4	5749980.83	756959.06	2	3260.69	3211.62559	49.06441
Prod-1	5751263.59	753544.03	2	3436.41	3363.87057	72.53944
PW-1	5753273.97	746871.41	2	3651.86	3650.69758	1.162423
PW-4	5749903.47	757080.64	2	3261.3	3211.15393	50.14607
BLM	5749875.774	747619.3353	2	3423.88	3477.45957	-53.5796
59760	5753542.123	745644.2729	2	3673.88	3689.49946	-15.6195
59761	5753651.95	745767.1115	1	3673.97	3650	23.97
59763	5745682.546	744838.9914	2	3239.21	3277.06484	-37.8548
59766	5748238.97	749134.0782	1	3427.01	3349.82345	77.18656
59772	5753567.96	745576.3765	2	3673.99	3692.6692	-18.6792
Bishop	5737591.618	739438.5058	2	3283.57	3229.58425	53.98575
26-092-915	5752919.74	746623.36	2	3632.65	3609.69868	22.95133
59764	5745486.076	744824.2058	2	3238.54	3274.39036	-35.8504
GW-2	5750095.917	741653.5673	2	3663.2	3568.22974	94.97026
GW-3	5750429.431	746634.088	2	3406.61	3480.93301	-74.323
GW-6	5743136.749	746410.9464	2	3236.33	3259.6545	-23.3245
57-1	5750748.81	744901.4855	1	3719.562	3635.67618	83.88582
57-10	5753153.426	747751.7198	2	3635.807	3624.93357	10.87343
89-2	5741867.98	750197.72	2	3235.88	3243.02551	-7.14551
GW-5	5747903.79	750454.07	2	3221.397	3277.56944	-56.1724
59770	5741943.924	742721.6097	1	3248.074	3260.13037	-12.0564
59768	5752477.26	751998.59	1	3469.885	3355.94361	113.9414
GMW-17-33	5751373.419	746528.5311	2	3458	3484.60545	-26.6055

Note to Reader: Use the CTRL key when clicking on the link below to open the file in a new browser window.

Appendix D
MODFLOW Files

Appendix E
Lorax - Mine Dewatering
Hydrogeologic Assessment
(Included as an attachment to this file)